Index of norms and ratings published in the Psychonomic Society journals

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The journals of the Psychonomic Society have served as outlets for numerous stimulus norms and ratings. Such norms are useful to researchers in a variety of areas for manipulating and controlling stimulus attributes. This article presents an index of 142 norms published in the Society's journals, categorized according to the types of materials and ratings that are included in each.

In many areas of psychological research, stimuli must be selected according to some attribute to achieve appropriate experimental control. Stimuli may be selected with respect to an attribute in order to use it as an independent variable, to avoid confounds of it with other variables of interest, or to examine the effects of it in relation to other variables. For example, it is customary to manipulate frequency of use as a factor, or to control for it as a potentially confounding variable, when one is examining perception or memory of words (e.g., Rao & Proctor, 1984). This is typically accomplished by consulting word frequency norms, such as those developed by Kučera and Francis (1967). Numerous other properties of words, letters, pictures, symbols, and so forth, are of interest as well, and careful selection of stimuli according to a number of attributes is often necessary. Over the years, many norms for stimulus materials have been published to enable researchers to select stimuli that satisfy the desired constraints.

Since the 1960s, the Psychonomic Society's journals have served as repositories for norms and ratings of various types. In the late 60s and early 70s, a large portion of the *Psychonomic Monograph Supplements* was devoted to such norms. In more recent years, *Behavior Research Methods, Instruments, & Computers (BRMIC)* has been the journal in which most norms are published, although norms have occasionally appeared in the other journals as well. Given the vast collection of norms that have been published in the journals, it should be of value to researchers to have an index of them. The purpose of this paper is to provide such an index, alphabetized by author, along with a table that classifies the norms according to their content.

The index follows in the tradition of Brown's (1976) catalog, which contains detailed information summariz-

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ing 172 studies that present information on scaled verbal materials, and Bradshaw's (1984) guide, which provides an index of 119 studies, mostly post-1960, that include norms, scales, ratings, or lists of verbal materials for use in experiments. Our index differs from theirs in not being restricted to verbal materials and in listing only articles published in *BRMIC* and the other Psychonomic journals. These journals include Memory & Cognition, Perception & Psychophysics, Psychonomic Bulletin & Review, and its earlier incarnations, Psychonomic Science and the Bulletin of the Psychonomic Society, as well as the Psychonomic Monograph Supplements mentioned above. In addition to searching the indexes of each volume of the respective journals, we consulted the earlier norm indexes by Brown and Bradshaw. We also searched PsycINFO, using the keywords norms, ratings, confusion matrices, and their variants. Our primary criterion for inclusion of articles was that they report characteristics for a stimulus set that might be of use and value to researchers. The index should be relatively complete, although it certainly is possible that some norms were overlooked.

The entries in the index itself are presented in alphabetical order by author. In addition, the articles are classified in Table 1 according to the following categories for the English Language: Word Frequency; Word Associations; Word Meanings; Anagrams and Completion Norms; Grapheme-Phoneme Correspondence; Imagery, Concreteness, Familiarity, and Related Measures; Letter Frequency; Letter Strings; Homographs, Homophones, and Homonyms; Typicality and Category Judgments; Names; Pictures and Symbols; Alphabetic Confusion Matrices; and Recall and Recognition. In addition, categories for Word and Picture Norms for Languages other than English and Other (norms that do not fit into the categories above) are included. For each study in a category we have indicated the characteristics of the stimuli that were scaled and the size of the corpus. Abstracts of the studies are not included, as in Brown's (1976) article, because of the widespread availability of computerized indexing services such as PsycINFO, which can be consulted if more information about the norms in question is desired.

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Table 1 Categories of Norms and Ratings

Categories of Norms and Ratings		
Study	Category	Corpus
	WORD FREQUENCY	
Bowen (1971)	Printed frequency	420 conceptual nouns
Brown (1984)	Conversational frequency	190,000 words
Keenan & Benjafield (1994)	Availability (the frequency with which a word is used in the definition of other words)	Oxford English Dictionary
Rudell (1993)	Frequency of word usage and perceived word difficulty	Four sets of 50 words from Kučera and Francis (1967)
	WORD ASSOCIATIONS	
Amster (1967)	Associative responses to mutually related pairs of words for children and adults	Word pairs from Russell and Jenkins (1954) and Palermo and Jenkins (1964) norms
Biersdorff & Solso (1973)	Word associations labeled by responses	Recodified Palermo and Jenkins (1964) word association norms
Duncan & Wood (1966)	Successive word associations	20 Kent-Rosanoff (1910) words
Garskof, Houston, & Mednick (1967)	Single and multiple associations: Overlap and direct associative strength values	480 word pairs
Geen & Stonner (1975)	Associates to verbs connoting violence	20 words
Gerjouy & Gerjouy (1965)	Word associations for institutionalized adolescent retardates	100 Kent-Rosanoff (1910) words
Lovelace, Reid, & Hunt (1981)	Free associations to conceptually structured word triads for elementary school, high school, and college students	40 word triads
S. S. Shapiro (1966)	Word association norms for 12- to 13-year-olds	82 words
S. I. Shapiro & Palermo (1968)	Atlas of normative free association data	20 collections of normative discrete free association data
Stark (1972)	Synonym responses to words that have synonyms as their free association primaries	100 words
Tresselt & Mayzner (1964)	Word association norms as a function of age from 18 to 87 years	Kent-Rosanoff (1910) words
Winters & Kahn (1970)	Word association norms for adolescent mental retardates, grade school, and undergraduate normals	200 words
Winters & Kahn (1971)	Word association norms for adolescent mental retardates and normal children	200 words
	WORD MEANINGS	
Britton (1978)	Lexical ambiguity as indicated by number of meanings	257 words
Dale & Fenson (1996)	Lexical development norms for young children	680 words
Ferraro & Kellas (1990)	Subjective number of meaning for words and pseudowords	576 words and orthographically legal pseudowords
Griffin (1999)	Frequency of meaning use for ambiguous and unambiguous words	211 words
Nickerson & Cartwright (1984)	Generated meanings for words	90 words
Roberts (1968)	Meaningfulness of sense impression adjectives	40 sense impression adjectives
Solso (1971)	Meaningfulness ratings for colors and color words	10 colors and 10 color words
Wilson (1988)	MRC psycholinguistic database	150,837 words and 26 linguistic and psycholinguistic attributes

Table 1 (Continued)

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Study	Category	Corpus
	ANAGRAMS AND COMPLETION NORMS	
Bloom & Fischler (1980)	Completion norms for sentence contexts	329 sentence contexts
Erickson, Gaffney, & Heath (1987)	Difficulty and familiarity norms for single- solution word fragments	192 word fragments
Gibson & Brooks (1993)	Word fragments with unique completions	4,741 word fragments
Gibson & Watkins (1988)	Word fragments with unique completions	1,086 word fragments
Graf & Williams (1987)	Completion norms for three-letter word stems	40 three-letter word stems
Hamberger, Friedman, & Rosen (1996)	Completion norms for sentence contexts from young and older adults	198 sentence contexts
R. Olson & Schwartz (1967)	Single and multiple solutions for five-letter words	3 lists (five-letter words)
Schwanenflugel (1986)	Completion norms for final words of sentences	Subset of Bloom & Fischler (1980) sentence completion norms
Shaw (1997)	Unprimed word-stem completion norms	914 multicompletion three-letter word stems
Fresselt & Mayzner (1966)	Solution times for solution words and associated anagrams	134 solution words and 378 associated anagrams
G	RAPHEME-PHONEME CORRESPONDENC	CE
Berndt, Reggia, & Mitchum (1987)	Probabilities for grapheme-to-phoneme correspondences	17,310 English words
Cowan (1986)	Consonant-cluster-free monosyllabic words	Matrix of English phonemes
Martin, Jones, Nelson, & Nelson (1981)	Words with multiple phonemic representations	52 strong and 62 weak heteronyms; 246 polyphones
Ziegler, Stone, & Jacobs (1997)	Database for feedforward inconsistency (multiple ways to pronounce a spelling) and feedback inconsistency (multiple ways to spell a pronunciation)	2,694 monosyllabic words
IMAGERY, CO	NCRETENESS, FAMILIARITY, AND RELAT	ED MEASURES
Altarriba, Bauer, & Benvenuto (1999)	Imagery, concreteness, context availability, and word associations	155 abstract words, 100 concrete words, and 71 emotion words
Benjafield, Frommhold, Keenan, Mucken- neim, & Mueller (1993)	Imagery, concreteness, goodness, and familiarity	500 proverbs
Benjafield & Muckenheim (1989)	Imagery, concreteness, goodness, and familiarity	1,046 words from the Oxford English Dictionary
Friendly, Franklin, Hoffman, & Rubin (1982)	Imagery, concreteness, orthographic variable, and grammatical usage	1,080 words from Toronto Word Pool
Gilhooly & Hay (1977)	Imagery, concreteness, age-of- acquisition, familiarity, and meaningfulness	205 five-letter words with anagram solutions
Gilhooly & Logie (1980a)	Age-of-acquisition, imagery, concreteness, familiarity, and ambiguity	1,944 words of varying length and frequency
Gilhooly & Logie (1980b)	Meaning-dependent imagery, age of acquisition, familiarity, and concreteness	387 ambiguous words
Hunt (1978)	Imagery for taxonomic categories	90 category names
Kerr & Johnson (1991)	Familiarity, concreteness, meaningfulness, imageability, imagery modality, and word associations for blind and sighted people	161 nouns
Stratton, Jacobus, & Brinley (1975)	Age-of-acquisition, imagery, familiarity, and meaningfulness	543 five- and six-letter words
Walker (1970)	Imagery ratings	338 nouns
	LETTER FREQUENCY	
Gilhooly (1978)	Bigram statistics	205 five-letter words with single solution anagrams
Mayzner & Tresselt (1965)	Single-letter and bigram frequency	20,000 English words
layzner, Tresselt, & Wolin (1965a)	Trigram frequency	20,000 English words
Mayzner, Tresselt, & Wolin (1965b)	Tetragram frequency	20,000 English words
Mayzner, Tresselt, & Wolin (1965c)	Pentagram frequency	20,000 English words
Jolso (1979)	Positional frequency and versatility of letters	Six-, seven-, and eight-letter words from Kučera and Francis (1967) norms
Solso, Barbuto, & Juel (1979)	Bigram and trigram frequencies and versatilities	577 bigrams and 6,140 trigrams
Solso & Juel (1980)	Positional frequency and versatility of bigrams	577 bigrams

bigrams

Table 1 (Continued)				
Study	Category	Corpus		
Solso & King (1976)	Frequency and versatility of letters and letter combinations	Kučera and Francis (1967) norms		
Stadtlander (1997)	Word neighborhood and frequency	800 words		
Topper, Macey, & Solso (1973)	Brigram versatility and frequency	Thorndike–Lorge (1944) and Underwood & Schulz (1960)		
	LETTER STRINGS CCCs, CVCs, and CVCVCs			
Costantini & Blackwood (1968)	Meaningfulness ratings	343 CCC trigrams		
Hunt (1977)	Meaningfulness values	300 CCC trigrams		
Ley & Karker (1974)	Pronunciabilty ratings	319 CVCVC words and paralogs		
Ley & Tesiny (1975)	Associative reaction time, meaningfulness, and pronunciability ratings	382 CVCVCs and paralogs		
Lippman & Kintz (1968)	Ranks for pronunciability and ease of learning	20 CVC trigrams		
Noble (1967)	Pronunciability ratings	100 CVC trigrams		
Nodine & Hardt (1969)	Pronunciation latencies for CVC trigrams	2,100 CVC trigrams		
Scott & Baddeley (1969)	Acoustic confusability values	1,172 CCC trigrams		
S. S. Shapiro (1964)	Meaningfulness values for grade-school-aged children	52 CVC trigrams		
Taylor (1970)	CVC trigram meaningfulness	210 trigrams and 20,000 words		
	Letter Sequences and Approximation to English			
Hirata & Bryden (1971)	Letter sequences varying in approximation to English	100 10-letter sequences		
Lachman & Laughery (1965)	Letter association and sequence norms	All letters of the alphabet		
Rubin (1981)	Order approximation and orthographic neighborhood ratio	925 nouns		
	Other			
Amster & Keppel (1966)	Letter association norms for children	26 single-letter and 676 double-letter stimuli		
Jones (1980a)	English palindromes (strings of letters that spell the same word forward or backwards)	81 palindromes from Chambers Twentieth Century Dictionary		
Jones (1980b)	Heteropalindromes (strings of letters that form words when read forward and backward)	145 heteropalindromes		
HON	MOGRAPHS, HOMOPHONES, AND HOMON	YMS		
	Homographs			
Azuma (1996)	Familiarity and relatedness among meanings	110 homographs		
Gawlick-Grendell & Woltz (1994)	Meaning dominance norms	120 homographs		
Geis & Winograd (1974)	Semantic encoding variability	50 homographs		
Gorfein, Viviani, & Ledo (1982)	Four continuous word associations to each homograph	107 homographs		
Nelson, McEvoy, Walling, & Wheeler (1980)	Meaning dominance norms	320 homographs		
Twilley, Dixon, Taylor, & Clark (1994)	Relative meaning frequency	566 homographs		
Warren, Bresnick, & Green (1977)	Definitional dominance	20 English homographs		
Wollen, Cox, Coahran, Shea, & Kirby (1980)	Frequency and concreteness of homograph meanings	120 homographs		
	Homophones and Homonyms			
Ferreira & Cutting (1997)	Pictures and questions for elicitation of homophones	93 pictures and 108 questions		
G. A. Olson & Kausler (1971)	Orthographic distinctiveness of homonyms	139 homonym pairs		
Whalen & Zsiga (1994)	Subjective familiarity of English word/name homophones	40 homophones		
1	TYPICALITY AND CATEGORY JUDGMENTS	S.		
	Typicality			
Ashcraft (1978)	Property norms for typical and atypical items	121 words, 17 categories		
Bjorklund, Thompson, & Ornstein (1983)	Category typicality norms for 12 natural lan- guage categories for kindergarten, third- grade, sixth-grade, and college students	12 natural languages		
Chiarello, Shears, & Lund (1999)	Imageability and distributional typicality measures	1,197 words		

Table 1 (Continued)

	Table 1 (Continued)	
Study	Category	Corpus
Gruenenfelder (1984)	Typicality ratings for exemplars and categories	893 exemplars of 93 categories
Katz (1983)	Dominance and typicality norms	170 nouns and 459 properties
Maridaki-Kassotaki (1997)	Family resemblance scores of category mem- bers used to derived typicality ratings for young children and adults	4 categories of 12 words
Uyeda & Mandler (1980)	Prototypicality norms for semantic categories Category	840 words and 28 categories
Chaffin & Herrmann (1981)	Ratings of antonymy, synonymity, subordination, coordination, and similarity for word pairs	2 sets of 20 stimulus pairs
Hunt & Hodge (1971)	Category-item frequency, and category-name meaningfulness	84 categories
Loess, Brown, & Campbell (1969)	Norms for items in taxonomic categories	30 taxonomic categories
Posnansky (1978)	Category norms for children Grades 2-6	25 categories
S. I. Shapiro & Palermo (1970)	Conceptual organization and class membership	100 conceptual categories
	NAMES	
Conley, Burgess, & Hage (1999)	Two corpora of proper names, one based on U.S. phone book listing, and the other derived from a database of Usenet text	More than 10,000 names from the U.S. phone book corpus and more than 5,000 names from the Usenet-based corpus
Surprenant et al. (1999)	Familiarity and pronunciability of nouns and names	199 surnames and 199 nouns
Zechmeister, King, Gude, & Opera-Nadi (1975)	Ratings of frequency, familiarity, orthographic distinctiveness, and pronunciability	192 surnames
	PICTURES AND SYMBOLS	
	Snodgrass and Vanderwart Pictures	
Berman, Friedman, Hamberger, & Snodgrass (1989)	Name agreement, familiarity, and visual complexity of line drawings for children and adults	62 Peabody Picture Vocabulary Test-Revised and 259 Snodgrass and Vanderwart (1980) pictures
Snodgrass & Poster (1992)	Visual-word recognition threshold for screen-fragmented names	Names corresponding to Snodgrass-Vanderwart's (1980) pictures
Snodgrass & Yuditsky (1996)	Naming times and age-of-acquisition ratings for pictures	250 Snodgrass-Vanderwart's (1980) pictures
	Objects, Symbols, Figures	
Boutsen, Lamberts, & Verfaillie (1998)	Recognition times for depth-rotated objects	56 depth-rotated objects
Danks (1972)	Associative responses to novel figures	22 novel figures
de Bruijn, McDougall, & Curry (1999)	Database for selection of icon and symbol sets	ESPbase
McDougall, Curry, & de Bruijn (1999)	Concreteness, complexity, meaningfulness, familiarity, and semantic distance for symbols	329 symbols
Verfaillie & Boutsen (1995)	Full-color images of depth-rotated objects, with up to 11 perspective views of each object	714 full-color images of depth-rotated objects
	ALPHABETIC CONFUSION MATRICES	
	Visual	
Boles & Clifford (1989) Geyer (1977)	Upper- and lowercase alphabetic similarity Recognition and confusion of lowercase alphabet	2,704 letter pairs Lowercase letters of the alphabet
Geyer & Gupta (1981)	Confusion matrices for dot matrix and conventional font capital letters	9 letters
Keren & Baggen (1981)	Feature list for uppercase letters based on interletter confusion matrices	Uppercase letters of the alphabet
Townsend (1971a)	Alphabetic confusion matrix for individuals	Uppercase letters of the alphabet
Townsend (1971b)	Alphabetic confusion matrix	Uppercase letters of the alphabet
van der Heijden, Malhas, & van den Roovaart (1984)	Interletter confusion matrix for continuous- line capital letters	Uppercase letters of the alphabet
	Tactile and Auditory	
Craig (1979) Kikuchi, Yamashita, Sagawa, & Wake (1979)	Confusion matrix for tactually presented letters Confusion matrix for tactile letters generated	Uppercase letters of the alphabet Uppercase letters of the alphabet
Loomis (1974)	by a 17×17 matrix of tactile stimulators Tactile letter recognition under different modes of stimulus presentation using a 20×20 ma- trix of vibratory tactors placed against the back	Block capital letters

Table 1 (Continued)

	Table I (Continueu)	
Study	Category	Corpus
Loomis (1982)	Confusion matrices for Braille letters and characters presented as touch stimuli and visual stimuli	Uppercase letters and Braille characters
Manning (1977)	Auditory and visual similarity of consonants	English consonants and consonant letter triplets
	RECALL AND RECOGNITION	
Bell & Shapiro (1971)	Norms for organizational strategies in free recall	48 lists of 16 unrelated words
Butler & Biner (1990)	Recall norms of common spaces and activities	40 spaces and 123 behaviors
Christian, Bickley, Tarka, & Clayton (1978)	Measures of free recall of nouns	900 English nouns
Stadler, Roediger, & McDermott (1999)	Norms for word lists that create false memory	36 word lists
WORD AND PI	CTURE NORMS FOR LANGUAGES OTHER	THAN ENGLISH
May & Anderson (1001)	Chinese Sets of Chinese characters and their pronun-	4 cata of 12 about atom
Mou & Anderson (1981)	ciations that varies as a function of whether the vowel is the same or different and the rad- ical is the same or different	4 sets of 12 characters
Rickard Liow, Tng, & Lee (1999)	Semantic and phonetic regularity in Man- darin for China, Singapore, and Taiwan	256 semantic and 96 phonetic compound characters
A1 ' 8 F 1(1000)	French	400 1
Alario & Ferrand (1999)	Name agreement, familiarity, visual com- plexity, image variability, and age of acquisi- tion for French	400 pictures
Peereman & Content (1999)	Orthography-phonology statistics for French monosyllabic words	LEXOP lexical database
Ziegler, Jacobs, & Stone (1996)	Database for feedforward inconsistency (multiple ways to pronounce a spelling) and feedback inconsistency (multiple ways to spell a pronunciation)	Monosyllabic French words from the database
	Spanish	
Algarabel, Ruiz, & Sanmartin (1988)	University of Valencia's computerized word pool	16,109 Spanish words
Cuetos, Ellis, & Alvarez (1999)	Naming times for pictures in Spanish	Snodgrass-Vanderwart (1980) pictures
Sanfeliu & Fernandez (1996)	Picture standardized for Spanish for name agreement, image agreement, familiarity, and visual complexity	254 Snodgrass-Vanderwart (1980) pictures
Santiago, Justicia, Palma, Huertas, & Gutiérrez (1996)	Surface word forms in Spanish	Spanish linguistic database
	Welsh	
Fear (1997)	Ratings of age of acquisition, familiarity, concreteness, and imageability for Welsh words and their English equivalents	705 English and Welsh equivalent words
	OTHER	
Arlinsky & Epstein (1965)	Frequency of grammatical classes in produc- tion of random strings and grammatically correct English sentences	Produced strings and sentences of 11, 22, or 33 words
Fearnley (1997)	Program that allows words to be extracted from the MRC Psycholinguistic database according to word length, number of syllables or phonemes, frequency of use, imageability, concreteness, meaning, etc.	Medical Research Council (MRC) Psycholinguistic Database of approximately 100,000 words
Fuhrman, Bodenhausen, & Lichtenstein (1989)	Kindness, intelligence, goodness, and nor- mality ratings for statements about social be- haviors	400 social behavior statements
Hendrick, Hoving, & Franz (1974)	Children's likableness ratings for common trait adjectives	22 trait adjectives
Libkuman (1994)	Norms for generation of rhyme words	477 words

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