

SUBJECT INDEX

- Abbreviations, 117
Abstractions, 4, 6–8, 10
ABX method, 172, 268
Accessibility, linguistic structure, 59–67, 374–379. *See also* Awareness, linguistic
Acoustic cues, 36–43, 50, 135, 137–138; *see also* Cues
and coding of phoentic segments, 47–48
demodulation of, 136
and linguistic awareness, 139
and vowels, 310, 314
Acquisition, reading, 2, 3, 126, 135, 293–294, 331, 346–354; *see also* Reading
and character recognition, 346
and functional asymmetries of brain, 304
and mapping of systematic phonemes, 337
Acuity, auditory, 7, 134
confusability, 178
Adults, 204, 205
and awareness of phonemic segmentation, 328
speech and reading in, 206–217
Alliteration, 323, 324
Allomorphs, 100
Allophones, 313
Alphabets, 57–59, 103–106, 117–118, 120, 122, 217
acoustic, 136
historical evolution of, 373–374
and reading success, 144, 347–348
Altaic peoples, 118
Ambiguity, sentence, 61, 186, 363; *see also* Disambiguation
Ampersand, 87, 118
Amplitude, sound, 49
Analysis-by-synthesis system (ABS), 38–41, 134–139, 143, 155, 284–286
as active model, 203–204
and internal memory system, 166
Aphasia, 169, 224
Appalachia, 153
Arabic, 20
Articulation, 33–35, 40–43, 47, 177, 215, 328; *see also* Vocalization
and comprehension, 210
cues, 37
and the deaf, 230–231, 233, 242, 249
and difficulty of material, 245
and eye fixations, 210
and phonetic level, 368
and silent reading, 206–209, 216
and STM, 210, 215
suppression of, 211–214
Asahi-Shimbun, Japanese newspaper, 92
Aspiration, 20
Association, word, 6, 179–180
Atlas, 98
Attention, 280
selective, 286
span, 245–247
Awareness, linguistic, 138–141, 157, 321, 376, 378–379
control of, 140–141
and historical evolution of writing, 374–375
individual variation in, 140, 144
and inner speech, 144
and language-based skills, 141–145
and phonemic segments, 309–310, 323, 328, 363
Babbling, 10, 12, 20, 201–202
Bina-View display, 212–213
Blending, 324, 328, 351–352
and maturation, 328
Blindness, 26
Book of Common Prayer, 3
Brain
damage, 169, 204
and hemispheric transfer of information, 173–174, 201–202
Byelorussian, 128
Calligraphy, 85–90
Cantonese, 87
Capitals, 5, 117
Central Asia, 86
Character recognition, 346–348
Cherokee, 152–153, 156, 375
Children, 205
causes of misreading in, 293–314
passim
and components of reading, 346
comprehension, 346, 353–354
decoding, 348–353
genesis of speech code, 217–218
and iconic imagery, 346, 347
letter recognition, 346–348
and phonemes, 111–115, 348
primary memory in, 353, 354
Chimpanzees, 4

- Chinese, 62, 81–101, 103–109, 118, 120, 128
- Chinese characters
 adapted into Korean, 82–83
 adapted into Vietnamese, 81–82
 grouping of morphemes, 86
 ideography, 84, 121–122
 and Japanese characters, 93–99
 meaning-visual form relationship, 167
 nonalphabetical system, 81
 pictographs, 83
- Chinese language
 graphic counterparts, 108
 sound representation, 107
 teaching of, 107–109
 transliteration, 86
 vowels, 83
- Cinefluorography, 43
- Classification, 193–202
 basis of, 195–200
 linguistically mediated, 194
 model for, 200–202
- Cloze procedure, 15
- Cluster analysis, 5, 57
- “Cocktail-party” phenomenon, 259
- Codes, 161–187, 205, 236–237
 and children, 348–353
 and deafness, 223–236 *passim*
 name, 169–182, 199, 224
 nonverbal, 251
 phonological, 210–215, 221–226, 228, 231, 235, 243–244, 318
 speech, 211–223, 249
 varying of strategies, 245–247, 249
 visual, 161–169, 178, 199, 219–221, 223, 226, 241–242
- Cognition, 3, 194
 and literacy, 127–128
- Columbia Vocabulary Test, 225–226
- Communications
 model, 30–36
 receiver, 281–282
- Comprehension, 100, 168, 182, 193, 242–243, 368; *see also* Understanding
 and articulatory input, 210
 and beginning readers, 294–296
 child’s, 346, 353–354
 and the deaf, 232–236
 and evocation of sound, 206–209
 and primary memory, 339–341, 353–354
 serial, left-to-right, 338
 and silent-reading speed, 209–210
 and speed reading, 156
 and STM, 218–219
- Concept, 3, 4, 205
- Confusability, 214, 249–250
 acoustic, 282
 and learning to read, 320, 347
 and letter reversibility, 301–302, 313, 327
 and optical shape perception, 299
- Consciousness, 182–186, 193, 203
 and attention demands of sentences, 184–186, 206
 probe methods, 183–184
 and STM, 215
- Consonants, 279, 306–307
 clusters, 57
 and mishearing, 310
 orthography, 312n
- Content, linguistic, 143
- Context, 367–368
- Cryptography, 27
- Cues, 36–43, 50, 100, 135, 137–138;
see also Acoustic cues
 in auditory memory, 258–260, 263–265, 268–270
- Cuneiform, 118
- Czech, 63, 85
- Deafness, 13, 21, 26, 100, 135, 165, 241–242, 362, 367–378
 and articulation, 230–231, 233, 242, 249
 and comprehension, 232–236
 finger-spelling, 226–228, 234, 249
 imagery, 231
 nature of transduction for, 206, 241
 and numbers, 226, 227, 234–235
 phonological coding, 224–228
 and reading, 223–237, 249, 369
 and speech, 224, 225
 and STM, 223–236 *passim*
 vocabulary, 225–226
- Decoding. *See also* Encoding
 analysis-by-synthesis method, 38–41, 134–135, 138–139, 143, 155, 166, 203–204, 284–286
 in children, 348–353
 of Chinese texts, 85
 by look-say method, 349
 speech, 29–30, 48, 50, 53, 100, 134, 281–282, 285–286
 speed, 353–354
 and word-by-word reading, 243–244
- Demodulation, 136

- Determiners, semantic, 119
 Dialects, 104, 125, 313, 319–320, 376, 379
 Differentiation, perceptual, 16
 Digraphs, 126, 368
 Disability. *See* Reading disability
 Disambiguation, 338–339; *see also*
 Ambiguity
 Dominance, cerebral, 302–304, 313–314, 329
 and information transfer, 173–174, 201–202
 Dutch, 97
 Dyslexia, 144, 151, 194

 Ear, 1, 133, 136, 174
Early Experience and Visual Information Processing in Perceptual and Reading Disorders (Young and Lindsley), 377
 Education, minority, 152–153, 156, 375–376; *see also* Reading education
 Educational Testing Service, 109
 Egyptian, 118–119, 126
 Electromyographic (EMG), 43, 206–209, 215–216
 and the deaf, 226
 Encoding, 194; *see also* Decoding
 and classification, 193–202
 and coordination, 35
 name codes, 169–182, 203
 speech, 25–29, 32–33, 134
 visual, 161–169, 178
 English, 57–58, 119–121
 acquisition of phonology, 126
 and dialect, 125–126
 memory analysis of written, 281
 morphophonemic irregularities, 122
 orthography, 121–122, 310n, 311n
 as second language, 122, 126
 spelling, 60, 150
 underlying forms in, 121
 English Picture Vocabulary Test, 220–221
 Enunciation, and silent reading, 209–210
 Events, 136
 invariants of, 5–6
 Experience, 4, 196, 200–201
 and linguistic skills, 141–142
 in reading processes, 159, 165
 Exploration, 7
 Eye, 1, 133–136, 174
 fixations, 210, 217, 331–333, 341, 360
 movements, 8–9, 341, 367, 369
 -voice span, 14–15, 160

 Familiarity, and visual codes, 164–166
 Faroese, 111–113
 Feedback, 10, 12, 32–33
 and familiarity, 165–166
 gamma-efferent, 43
 visual, from motor activity, 20–21
 Filtering, 7, 8
 Finger-spelling, 226–228, 234, 249
 Finland, 151
 Finnish, 122, 127, 150
 Fixations, eye, 210, 217, 331–332, 341, 360
 and iconic representation, 332–333
 Fluency, 296, 313
 French, 58, 126

 Generation, of visual information, 167–168
 German, 72–73, 117, 122, 124, 127, 151
 Global elements in writing (logograms), 118–119, 144
 Grammar, 4, 11, 14, 16–17, 280–281
 Graphemes, 12, 57
 Graphology, 4, 9, 12–17, 20
 and optimal orthography, 61–67
 Gray Oral Reading Test, 296–299, 301
 Greece, ancient, 373–374
 Greek, 119, 128

 Handwriting, 124
 Hankul, 82–83, 85
 Haskins Laboratories, 124, 204, 259, 265, 279
 Hearing, 251
 buffer storage, 255–256
 and memory, 251–273
 persistence for storage, 254–256
 Hebrew, 20, 128, 152
 Hexagraphs, 155
 Hieroglyphs, 118–119
 Hiragana, 90
 History, birth of, 373–374
 Homophony, 63–64, 97–98, 243, 250, 362, 367
 Hungarian, 117, 122
 Hyphenation, 117

 Iceland, 329
 Icon, 332–335, 361
 of child, 346, 347

- Icon (*continued*)
 and decision latency in synonyms, 337, 370
 Gough's definition of, 367
- Identification, 7
 and learning to read, 293
 letter, 299, 304, 333-335
 of memory, 286-287
 of segmental features, 48
- Ideographs, 321
 Chinese, 84, 87-109
 compound, 84
 in Japanese, 93-99
 learning of, 106
 space-saving aspects of, 101, 103
 system's size and complexity, 103
- Imagery, 168-169, 281-282
 auditory, 212, 215
 components, 54
 in the deaf, 231
 speech, 207-209
 visual, 210
- India, 86
- Indians, American, 152
- Information, 380
 and attention span, 245-247
 cross-modal stimulation, 174-175
 generation of visual, 167-168
 input, 143
 linguistic content available to ear and eye, 137
 pick-up, 6-8, 16-17
 processing, 289, 380; *see also* Memory; PAS
 reclassification, 160
 storage, 247
- Initial Teaching Alphabet (ITA), 127
- Input, 143, 144
 and long-term memory, 380
 and phonemes, 173
- Instruction, 4, 293, 294; *see also* Reading education
- Internalization, 280
 of phonological rules, 58-59, 62, 67-68, 138
- Intonation, 10, 117, 289
- Introspection, 207-208
 negative, 209, 211
- Intuition, reader's. *See* Consciousness
- Inversions, 347
- Japanese, 83-92, 95-101, 103, 109, 118
 Chinese loan-words and characters, 93-99
 European loan-words, 97-98
 incidence of reading failure, 109
 orthographic standardization, 90
 proper names, 101
 and sound representations, 108
 Japan Broadcasting Company (NHK), 100
- Kan (Hàn) readings, 87
 K'anghsi dictionary, 83-84
 Kánji, 90, 249
 Katakana, 90, 93, 97-98
 Kenkyusha, Japanese-English Dictionary, 97
- Kinesthesia, 251
- Korean (Hankul), 63, 82-83, 85, 87, 100-101, 118
 punctuation, 92-93
 vernacular characters, 94-95
- Kun (explanatory) readings, 88-89, 94-95
- Language, 373
 acquisition, 135
 conveyed by script, 117-124
 conveyed by speech, 25-30, 284
 production of, 30-36
 role of memory in understanding of, 277-287
 second, 156
- Legibility, 136
- Letters
 child's recognition of, 346-348
 identification of, 299, 304, 333-335
 -phoneme associations, 319-325, 327
 in reading process, 359-364
 reversal, 300-301
 Roman capitals, 5
- Lexemes, 86
- Lexicon
 acquisition of, 11
 ambiguity, 338-339, 363
 child's, 346, 348
 mapping of, 335-338
 search, 338-339
 and sensory modality, 280
 subjective, 179-182
- Linguistic methods, 350
- Linguistics, 133-138, 280-281
 awareness, 138-141; *see also* Awareness, linguistic
 and reading difficulties, 294, 299, 304-307, 314
 shortcuts, 249

- written, 283-284
 Lip-reading, 234
 Listening. *See* Reception, speech
 Literacy, 127-128, 151
 among American Indians, 152
 and Cherokees, 152-153
 effect on civilization, 373-374
 social context of, 375-376
 Logic, 373, 374
 Logogen system, 255
 Logogram, 118-119, 144
 Logography, 81, 83, 86, 118
 in Western writing, 86-87
 Long-term memory. *See* Memory
- Machines, 136
 spectograms, 27-29, 36, 43, 136
 Mandarin [scholar], 103-106
 Man'yō-shū, 90
 Mapping, 335-338, 349-350
 phonological, 337, 362-363
 Meaning, 3, 13-14, 17, 160, 179, 193
 isolability of levels, 181-182
 and name codes, 179-182
 and speech perception, 54
 and visual form, 167, 169
 Memorization, 215, 223
 Memory, 42-43, 48, 51, 54-55, 177, 205, 224
 after-image, 253, 268
 aurally presented, 170, 255-256
 and consciousness, 183
 and cross-modal stimulation, 174-175, 178
 functions, auditory and visual, 251-273
 identification of, 286-287
 long-term (LTM), 242, 246-247, 277-278, 282, 287, 377, 380
 necessity for, 283
 and PAS (acoustical), 254-273, 278-283
 pictorial, 167
 primary, 339-345, 353-354, 363
 and reading difficulties, 299, 320
 role in understanding of language, 277-287
 short-term (STM), 210-213; *see also* Short-term memory
 tactile, 282
 in understanding speech, 285-286
 visual, 277, 282-283
 and written record, 374
 Mimicry, 37
- Ministry of Education, Japan, 92
 Minority groups, 152-153, 156-157
 Mirror image, 347
 Mishearing, 294, 307-310, 314
 Misreading, 145, 201, 293-314
 as different from mishearing, 307-310
 error rate on vowels, 310
 linguistic aspects of error pattern, 304-307, 314
 reversals, 299-304
 word as locus of difficulty, 294-299
 Modality, 133-135, 252-253
 Moras, 93
 Morphemes, 6, 10, 118, 120
 in Chinese system, 81, 86
 in English orthography, 60
 and linguistic awareness, 140
 Morphology, 11-12, 20, 127
 Morse code, 136
 Motivation, 5, 7
 and learning to read, 319, 321
 Motor theory of speech perception, 37-38, 170-173, 177
 and lateralization of function, 303
 and reversal errors in reading, 302-303
 of speech preparation, 170-173
 Muscle contraction, 33-35, 49-50
 Mynah bird, 4
- Name codes, 169-179, 194-196, 199, 203, 224
 and cross-modal stimulation, 174-175, 178
 and hemispheric transfer, 173-174, 178, 201-202
 length of, 177-178
 level of, 175-178
 and meaning, 179-182
 National Academy of Sciences, 377
 National Language Research Institute, Japan, 91, 92, 100
 National Research Council, Division of Medical Sciences, 377
 Neurology, 319
 Neural signals (commands), 33-39, 41-42, 49-50, 54-55, 133
 and the ear, 137
 and memory, 256
 New Stanford Paragraph Reading Test, 298n
 Nonalphabetic writing systems, 2, 3, 81-101, 136
 Chinese, 85-86
 distinctive features of, 5

- Nonalphabetic writing
 systems (*continued*)
 Hankul, 82–83
 less redundant than speech cue, 145
 and visual perception of objects, 169,
 218
 in western writing, 86–87
- Numbers, 117, 177–178
 and the deaf, 226–227, 234–235
- On (phonetic) readings, 88–89, 94–95
- Orientation, letter, 300–301, 313
- Orthography, 12, 29, 57–79, 120–121,
 137, 363; *see also* Spelling
 abstractness, 150
 and accessibility of linguistic structure,
 59–61, 379
 arbitrariness in, 61–64
 defined, 58
 economy, 64–67
 Finnish, 122
 and lexical mapping, 335–336
 optimal, 61–67, 120–121
 and phonetic variation, 58
 and phonology, 111–115, 120–122
 principles of representation, 67–79
 Sino-Japanese, 83–92
 and verse, 150–151
 and vowel error in reading, 310–314
- Paired-associate learning (PA), 349, 351
- Palindromes, 6
- Paraphrasing, 368
- Parrots, 4
- PAS (precategory acoustic storage),
 172n, 254–273, 278–280, 289
 access to information, 255
 decay time (recency effect), 259–260,
 265, 268
 displacement mechanism, 257–258
 duration of information, 254–255,
 277–278
 hemispheric property of, 269
 identification of memories, 286
 and pattern recognition, 280–283
 properties of, 279–280
 stimulus suffix, 256–258, 260–264,
 278–279, 289
 stimulus vocabulary, 264–269
 type of information in, 260–269
 usefulness of theory, 269–273
- Pattern recognition, 166, 280–283
- Peabody Picture Vocabulary Test, 220
- Percent sign, 118
- Perception
 active, 203
 analysis-by-synthesis system, 38–41,
 134–139, 143, 155, 166, 203–204,
 284–286
 categorical, 172
 in genesis of speech code, 218–219
 and inflow models, 201
 through listening, 135
 and mishearing, 308
 motor theory, 37–38, 170–173
 phonological, 113–115, 319–323
 and reading difficulties, 299–300, 304
 speech, 1–3, 30, 36–43, 134, 321–323
- Perceptual learning, theory of, 4–8
 content, 4–6
 motivation and reinforcement, 7–8
 pick-up process, 6–8
- Performance
 reading, 159–189
 silent reading, 215–217
 verbal, 169
- Phonemes, 6, 12, 62, 243, 319
 accurate production of, 10–11
 and children, 111–115, 348
 dominant surface, 68–69, 113
 dominant underlying sound segments,
 72–75, 112–113
 and input, 173
 and linguistic awareness, 379
 and mapping, 337, 362–363
 opaque surface, 69–72
 in reading, 134, 309, 319–325
 segmentation, 304–306, 309, 327–329
 and speech perception, 321–323
- Phonics, 160, 349–350
- Phonological system, 4, 9–12, 16–17,
 362
 acquisition of, 9–11
 and alphabets, 120
 child's, 346
 and orthographic rules system, 12
 and primary memory, 339
 and reader's lexicon, 335
 and reading errors, 309–310
 rule system, 11
 and speech production, 35
 and vowel errors in reading, 310–313
- Phonology, 32, 57, 111–115, 370
 age of acquisition, 126
 and dialect differences, 125
 internalization of rules, 58–59, 62,
 67–68, 138
 and linguistic awareness, 139–140

- in reading process, 137, 210–215, 237
 and silent reading, 210–211
 and skilled reader, 142, 143
 and STM code, 220–226, 228, 231,
 241, 243, 313
- Phrases, 142
- Pictographs, Chinese, 83
- Pig Latin, 141, 157, 322, 327
- Plurals, 71–72
- Possessives, 72
- Precategorical acoustic storage. *See*
 PAS
- Primary memory (PM), 339–345, 363
 in children, 353, 354
- Printing, 124
- Probe experiments, 183–184
 and ambiguity, 186, 363
 and sentences, 184–186
- Production, speech, 25, 30–36
 and perception, 36, 134
 of phonemes, 10–11
- Pronunciation, 104, 125–126, 155, 285,
 328, 361, 379–380
 of letters, 360
- Psycholinguistics, 9
- Psychology and Pedagogy of Reading*
 (Huey), 8
- Punctuation, 14, 92–93, 117
- Reading, 36, 133–145, 373–381
 acquisition of, 2, 3, 126, 135, 293,
 331, 346–354
 active processor, 204
 age at which learned, 126, 293
 character recognition, 346–348
 compared with listening, 133–138, 143
 component processes in, 159–187
 and consciousness, 182–183
 and the deaf, 223–236, 249, 369
 and decoding, 348–353
 difficulty of, 143–145, 293, 314
 dominant code, 241–248
 error pattern, linguistic aspects of,
 304–307
 eye fixation, 210, 217, 331–333, 341,
 360, 367, 369
 genesis of, 217–223
 iconic representation, 332–333
 image components, auditory and kines-
 thetic, 54
 isolability of subsystems, 160–164
 as language-based skill, 141–145
 as letter-by-letter process, 359–364,
 367
 and letter identification, 333–335
 and letter-phoneme associations, 319,
 322–324, 327
 and lexical mapping, 335–338
 and lexical search, 338–339
 and linguistic awareness, 138–141
 and meaning, 179–181
 and mishearing, 307–310
 and misreading, causes of, 293–314
 name codes, 169–179
 oral, 353, 354, 378
 and perception, 1–2
 perceptual learning theory, 4–8
 phonological inconsistencies, 125–126,
 310–313
 and phonological system, 10
 and primary memory (PM), 339–345
 and probe methods, 183–186
 process, described, 331–345
 psychological theory of, 3
 rapid, 135–136, 143–144, 155–156,
 209–210, 353–354
 reversal errors, 294, 299–304
 sequence of events in, 331
 silent, 206–210, 236
 speech and, 205–237
 and speech code, 211–223
 teaching of, 319–325
 visual codes, 161–169, 178
 and word spacing, 128
- Reading disability, 151–152, 156–157,
 319–321, 347
 causes of, 293–314
 and cerebral dominance, 303, 313–314
 linguistic aspects, 304–307
 and mishearing, 307–310
 reversal errors, 294, 299–304
 underlying social problems, 376
- Reading education, 122–123, 293–294,
 376
 age at which undertaken, 126, 293
 coerciveness, 152–153
 look-say method, 106, 349
 dialect differences, 123–126
 remedial, 157
- Reading readiness, 323–324
- Recall. *See* Memory
- Reception, speech, 25, 36, 42
 compared to reading, 133–138
 and hemispheric transfer of informa-
 tion, 173
 limits on rate of, 26–27, 135
 storage of, 278–280
- Reclassification, information, 160

- Recognition, 143, 195–196
 character, 346–348
 latency, 334, 336
 and learning to read, 293, 319
 for letters, 359
 pattern, 166, 280–283
- Reinforcement, 5, 7, 16
 and babbling, 20
- Remedial instruction, 157
- Retention, 247
- Reversal errors, in reading, 294,
 299–304, 313
 and cerebral dominance, 302–304
 and optical shape perception, 299–300
 and other types of error, 300–301
 visual or phonetic basis of, 301–302
- Rhyme, rime, 322, 327–328
 in reading readiness programs,
 323–324
- Rhythm, 327
- Romanization, 86, 97
- Russian, 72, 73, 128
 orthography, 150
- Saccades, eye, 210
- Sanskrit, 73n, 128
- Scanning, 7, 160
 and beginning reader, 293
 familiarity, 165–166
 of generated visual information, 168
- Scribbling, 12, 20
- Script. *See* Writing
- Segmentation, 72–75, 112–113
 and acoustic cues, 47–48, 312, 314
 and perception, 321
 phonemic, 304–306, 309, 327–329
 and reading readiness, 324
- Semantic system, 10, 17
 acquisition of, 11
 decoding of, 284
 and reading, 13–16
- Semitic script, 118
- Sensory information store (SIS), 277,
 280–286
- Serbo-Croatian, 122
- Sentences, 204
 child's understanding of, 346
 and consciousness, 184–186
 and STM, 242
- Shaw (Bernard) alphabet, 63
- Short-term memory (STM), 210–217,
 236–237, 241, 251, 277, 280, 283;
see also Memory
 auditory basis, 269–270; *see also* PAS
 and the deaf, 223–236 *passim*
 dominant code, 241–248
 errors, 212–213
 genesis of speech code in, 217–223
 and grammar rules, 281–282
 and identification of memory, 287
 phonological coding, 214, 217, 224,
 228, 235
 presentation format, 282
 and sensory modalities, 283
 and silent reading, 210–211
 visual, (VSTM), 286
 and vocalization, 215–216
- Shukan Asahi, 94, 98
- Shuō Wén dictionary, 84
- Sight words, 142, 325
- Signing, 234
- Silent reading
 and articulation, 206–214
 and comprehension, 210
 and the deaf, 236
 and performance, 215–217
 and short-term memory (STM),
 210–211
 and speech coding, 211–215
 and speed, 209–210
 and suppression of articulation,
 211–214
- Skimming, 156, 210
- Slavic languages, 128
- Slums, urban, 153, 375–376
- Sō (Sōng) readings, 87
- Sound Pattern of English* (Chomsky
 and Halle), 125, 127, 149
- Soviet Union, 7
- Spatial operations, 166, 320
- Spacing, word, 101, 103, 128
- Spectrograms, 27–29, 36, 43, 136
- Speech, 25–55, 133, 251, 373
 boundary conditions, 54
 codes, 25–29, 211–216
 compared to reading, 133–138
 and the deaf, 224–225
 decoding, 29–30, 285–286
 error pattern, 304–310
 global elements in, 118
 hemispheric transfer, 173–174
 inner, 143–144, 285, 378
 language conveyed by, 25–30
 limiting rates of, 26–27, 143–144
 and meaning, 54
 orthographical abstractions, 150
 perception, 1–2, 30, 36–55

- analysis-by-synthesis model, 38-41, 50-51, 53
 - motor theory of, 170-173
 - production of, 30-36
 - and reading, 205-237
 - relationship to writing, 117
 - role of neural mechanisms in, 37-38, 54-55
 - silent, 206-209, 236
 - as vehicle to meaning from print, 336
- Speech code, 211-223, 249
 - in short-term memory, 217-223
- Speech therapy, 328
- Speed, in reading, 135-136, 143-144, 193-200, 367-370
 - in child, 353-354
 - and classification, 195-200
 - in letter processing, 361
 - in silent reading, 209
- Spelling, 60, 126, 150, 378; *see also*
 - Orthography
 - and maturation, 328
 - patterns, 6-7, 165, 304
- Stanford-Binet scale, 218
- Storage, information. *See* Memory
- Strephosymbolia, 300
- Stress, 10, 289
- Stroop test, 14, 181
- Structure
 - linguistic, 59-61
 - relational, 5-6
- Suffix phenomenon, 256-264, 278-279, 289
- Sumerian-Akkadian cuneiform script, 118-119
- Syllabaries, 61, 119, 128, 144
- Syllable, 119, 140, 243, 298
 - and phonemes, 322-324
 - and reaction time, 368
 - sounding of, 323, 326
 - teaching of, 325-326
- Symbols (nonalphabet writing systems), *see* Nonalphabetic writing systems
- Synonyms, 336-337
- Syntactic system, 10, 17
 - and reading, 14-16
 - rule structure, 11
- Syntax, 4, 7, 16, 29, 32
- Synthesis, 38-41, 134-140, 166; *see also*
 - Analysis-by-synthesis system
 - in skilled reader, 142-143
 - speed of, 143-145
 - and versification, 141
- Target letters, 155
- Teachers (teaching), 319-321, 323, 328
 - and discouragement of pupil's interest, 327
 - reading readiness, 324-325
 - by syllables, 325-326
- Telegraphic code, 83
- Tō (Táng) readings, 88
- Tongue-twisters, 327
- Tōyō-Kanji, 90-92
- Transduction, 205, 224, 231, 241-242
 - sensory, 282
- Transmission, speech, 25
- Understanding, 156, 336-338; *see also*
 - Comprehension
 - and lexical ambiguity, 338
 - a message, 283-285
 - of speech, 285-286, 321
- Versification, 141, 150-151, 368-369, 378
- Vietnamese, 81-82, 118
- Vision, 134, 346
 - codes, 161-169, 178, 199
 - complex operations, 166-167
 - and hemispheric transfer of information, 173
 - in letter processing by adult, 159-160
 - and memory, 251-273
 - persistence for storage, 254
 - prelinguistic store in, 260
 - and reading difficulties, 294, 299, 319-321
- Visual code, 161-169, 178, 199, 219-226
 - role of in fluent reading, 241-242, 244
- Vocabulary, 43, 48-49, 62, 67-68, 325
 - and deafness, 225-226
 - of sight words and phrases, 142, 145
- Vocalization, 233-234, 252, 266-267, 336; *see also* Articulation
 - and difficulty of material, 245
- Vocal tract, 38-39, 49, 133, 137-138
- Vowels, 126, 266-269, 272-273, 279, 289
 - frequency in reading errors, 310
 - sources of errors, 310-314
- VSTM (visual short-term memory), 286
- Washoe, 4
- Wide Range Achievement Test, 298n
- Word
 - association, 6, 179-180

- word (*continued*)
length, 128, 334, 368, 370
and linguistic awareness, 140
matching, 180
misreading, 294–299, 304–360, 309,
314
recognition, 106–107
and serial processing, 361
spacing, 101, 103, 128, 354
understanding, 338
- Writing, 2, 117–124, 319, 373
acquisition of system, 126–127
ambiguity, 61, 186, 363
arbitrariness, 61, 62–64
cursive, 20–21, 63, 136
effects of on civilization, 373–374
efficiency of system, 127
global elements, 118
internalization of system's rules, 142
language conveyed by, 117–124
linearity of, 128
and linguistic processing, 368
literal elements, 119
nonalphabetic, 81–109
and optimal orthography, 61–67, 121
redundancy (economy), 61, 64–67
representation of role of, 123–124
standardization, 61
structural relationships, 6
word-length unit, 128
word spacing, 101, 103, 128
- Zihai dictionary, 84