

Subject Index

- Adoption studies, 274–275
- Alliteration skill, 113, 115, 117–118, 122–123, 128, 136, 138
- Alphabetic writing system, 5, 40, 127, 136, 410, 415
- Alphabets (types of)
 - artificial transparent alphabet, 5
 - German alphabet code, 391–392
 - opaque alphabet, 3, 225, 419–420
 - transparent alphabet, 2, 128–129, 203, 206, 225, 391, 409, 422
- Articulation, 161
- Auditory feedback, 87
- Auditory processing (nonverbal), 36, 81, 86–87, 88
 - nonspecific auditory deficit, 98
 - reading and, 227–237, 243
- Attention/habituation, 48
- Babbling
 - echoic babbling, 87
 - individual differences in, 157
 - language specific babbling, 156
 - universal consonants, 156
- Basic spelling code for English
 - phonemes, ix–x, 5
- Binomial test, 101, 137, 229, 231, 233, 345, 353
- Biological variation, 43, 153
 - lateral variation, 44, 153, 158–160, 166, 169, 204, 212, 216, 225
 - temporal variation, 44, 94, 153–155, 158–160, 166, 169, 204, 212–213, 216, 225, 356, 416
 - variation and test construction, 248–251
- Brain and sensory processing, 54–58
- Brain and speech analysis, 53–58, 85
 - brain stem acoustic analysis, 96–97
 - myelination and, 96
 - signal-to-noise ratio, 92
- Categorical perception, 46–48, 54, 59–68, 79, 87, 106, 413, 415
 - acoustic cues and, 231–234
 - poor readers and, 228–229, 231–237
 - trading redundant cues, 231, 233
- Clinical model of diagnosis
 - language impairment, 173, 179–180, 182–183, 189, 190–191, 193–194, 197, 204–205, 216–218, 418
 - reading problems and, 187
- Coarticulation, 34, 41, 45, 54, 64, 79, 83, 93–94, 410
- Consonant discrimination, 88–89, 413
 - dynamic elements in, 65–66

- Consonant discrimination (cont.)
 foreign languages and, 51, 52
 pitch differences and, 61, 67–68
 spectral elements in, 65–66
 voice onset time and, 45, 47, 60,
 67–68, 89, 413
- Correlational research, 10, 23, 138,
 214–215, 246–247, 253–254, 410
 lagged correlations, 23, 268, 379
 normative studies and, 246
 validity and, 243
- Correlational statistics, 216, 245,
 255–261
 analysis of covariance and, 252
 “blimp effect,” 371
 causality and, 254
 coefficient of alienation, 257
 homoscedasticity, 257
 linearity of distribution, 257
 “logically prior” variables, 254, 259,
 416
 magnitude of error, 255, 257
 multiple regression, 251–252, 258–
 260
 multiple regression and power (N)
 rule, 105, 259
 partial correlations, 251
 reliability controls, 260–261
 r statistic, 257
 scatterplot, 255–256, 258
 shared or common variance, 257–
 258, 260
 standard deviation, 255, 257
 standard error of estimate, 257
 validity and, 228
- The Dogma, 37, 39–40, 80, 97, 119,
 127, 243, 302, 412
- Down’s Syndrome and reading, 12,
 128–129, 419
- Dyslexia/dyslexic, 3, 9, 24, 97, 187,
 189, 206, 217, 239–242, 365–366,
 367, 385–387, 391–392, 397, 398–
 400
- Electronic speech, 21–22, 84
 child studies with, 59–68, 102
 speech spectrogram, 45, 89
 speech synthesizer, 47, 84
- Experimental research, 214–215, 218
- Explicit awareness, 28–30, 32, 36,
 41, 79, 111–112, 129, 136, 414
- Exponential function (age and
 processing speed), 360, 387
- Expressive language. *See* Productive
 language
- Eye movements and reading
 average reading speed, 401
 binocular tracking, 403, 405
 binocular vergence control, 403, 405
 fixation duration, 401
 peripheral span, 403–404
 text difficulty and, 402
 types of motor (muscle) control, 402
- Factor analysis, 143
- Functional illiteracy, 8, 196, 409
- General language impairment, 180,
 182–183, 186–187, 213, 263–264,
 415, 417–418
 computer profiles of, 190–194
 IQ and, 191, 213
 psychiatric diagnosis and, 199–201
 reading and, 188–189, 192, 194–
 195, 198–199
 self-concept and, 202
 sex differences and, 177, 190, 201,
 203, 213
 socioeconomic status and, 191

- testing for, 190–197
- Genetic research on language and vocabulary, 272–276, 408–410, 419, 420
- Gestural theory of speech perception. *See* Motor theory
- Home environment
 - and continuous naming speed, 361, 388
 - and reading, 122, 124, 131, 141, 144–146, 213, 347, 410
- Implicit sensitivity, 28–30, 41, 43, 58
- I.Q. tests (standardized)
 - Leiter IQ Test, 176, 179, 180, 187
 - Otis-Lennon Mental Abilities, 133
 - Raven’s Matrices, 348
 - Wechsler Adult Intelligence Scale (WAIS), 194–195
 - Wechsler Intelligence Scale for Children (WISC), 137, 177, 179, 183–184, 186, 188, 192, 231, 232, 264, 344–345, 346, 352, 369–372
 - Wechsler Preschool and Primary Scale of Intelligence (WPPSI), 380
 - Wechsler subtests and memory factors, 290–291, 294–297
- “Isolated groups design,” 10–11, 218, 222–225, 227, 230, 237, 238, 241, 246, 253, 258, 312, 336, 340, 349, 352, 393, 424
- publishing bias and, 224
- Language impaired children
 - (nonspecific), 154, 212
 - longitudinal studies of, 176–197, 212
 - reading and, 230
 - speech perception/production link, 89–90
 - temporal processing deficit theory, 97–99
- Language tests, standardized
 - Action Picture Grammar, 182
 - Bus Story Grammar, 182
 - Clinical Evaluation of Language Functions (CELF), 186, 192, 199, 253
 - Goldman-Fristoe-Woodcock auditory memory test (GFW), 192–193
 - history of, 173, 245
 - Illinois Test of Psycholinguistic Abilities (ITPA), 253, 349, 350
 - MacArthur Communicative Development Inventory (CDI), 95
 - Northwest Screening Test, 177
 - Peabody Picture Vocabulary Test (PPVT) (*see* Vocabulary tests)
 - Photo Articulation Test (PAT), 192–193
 - Primary Language Test, 113, 121–124
 - Reynell Expressive Language Scale, 166
 - Screening Test for Auditory Comprehension of Language (STACL), 192–193
 - Test of Adolescent and Adult Language (TAAL), 253
 - Test of Adolescent Language (TOAL), 194, 253
 - Test of Language Development (TOLD), 192, 196, 252–253, 327, 342, 343–344, 346, 350, 416
 - Test for Reception of Grammar (TROG), 181, 184, 253
 - Test of Word Finding (TAWF), 194

- Language tests and testing, 246–253
 criteria for, 252–253
 confounding variables, 251–252
 data conversion (types of), 250–252
 in-house tests, 246, 247, 362
 psychometrics, 247, 354
 ratings of, 252
 standard scores, 250
 standardized tests, 246, 249–250
 “Late effect” (declining language/
 reading skills after age 12), 196–
 197, 203–204, 263, 416–417, 420,
 422
- Late talkers, 161–169, 409
 causes of, 167, 170–172
 continuing delay, 168
 late bloomers, 163, 168–169
 receptive language in, 164–165
 sex differences in, 163–166
 socialization skills in, 164–165
- Matthew effect, 205–206
- Mean length of utterance (MLU),
 95
 Language-delayed children and,
 182, 183, 186
 late talkers and, 162, 168–169
- Memory. *See* Verbal memory; Visual
 recognition memory
- Metalinguistic awareness, 112–113,
 118, 121, 128, 337–339
 measurement of, 113–115, 117
- Morphemes (morphology), 329, 334
 awareness of, 116, 118, 120–122
 measurement of, 114, 117, 353
 reading and, 335, 349–350, 353–
 354, 422–423
- Motor theory of speech perception,
 81–86, 93
- Naming speed and reading, 360,
 420–421
 continuous naming speed (RAN),
 367–381
 decoding skill and, 359
 discrete naming speed, 362, 381–382
 errors versus speed, 379–381, 387
 hybrid test of naming speed, 382–
 387
 pause time, 375–376
 syntax and, 384, 405
 task reliability, 363, 367, 378
 voice-onset time (VOT), 362
- Naming speed, correlation with:
 age, 360, 363–365
 articulation rate, 373, 375
 brain development, 359, 361
 experience, 361
 IQ, 360–362, 367
 language impairment, 377
 paired-associate memory, 365, 377–
 378, 388, 421
 sex and, 362, 366, 376, 388
 short-term memory, 366
- National Reading Panel, viii, 4, 9,
 17, 130, 141, 426
- Parent communicative styles
 language development and, 172,
 276–281
 reading and, 279–280
- Perceptual invariance, 46
- Phoneme analysis tasks (types), 235
 phoneme deletion, 132
 phoneme discrimination, 113, 117,
 120, 229, 235–236
 phoneme isolation, 31
 phoneme segmenting, 30–31, 35,
 129, 141
-

- phoneme synthesis (blending), 114, 116–117, 120, 127, 140–141
- Phoneme analysis tests, 142–144
- Auditory Analysis Test (AAT) (Rosner and Simon), 135, 201, 352, 354, 355
- Elkonin segmenting and blending, 142
- Lindamood Auditory Conceptualization (LAC), 134–135, 376
- Word analysis task, 132
- Phoneme awareness, 8, 22, 37–38, 41, 58, 118, 123–124, 127–128, 131–132, 135, 245, 414
- discrimination in infants, 47–58
- vocabulary growth theory of, 73–79
- Phonological awareness
- training of, 9
- home environment and, 144–146
- measurement of, 111–125, 230
- units of, 111–124
- Phonological development theory, 8–10, 24–28, 32–42, 411–415
- PDT scorecard, 41–42, 146–149, 204
- “Phonological processing” (speech and hearing sciences definition), 2, 161
- Phonotactic structure, 49–50, 67
- probability learning and, 50–51, 56–57
- Productive language (expressive language), 11, 12, 44, 46, 113, 116, 119, 130
- articulation, 46
- early consonant repertoire, 156, 158–159, 167, 169
- individual variation in childhood, 157–160
- sex differences, 174–175
- speech accuracy norms, 174–175
- Prosody, 48–49
- Reading comprehension, 417, 422–424
- Reading fluency training, 389
- Reading mechanics (decoding), 12
- Reading strategies (decoding), 3
- Reading tests (standardized)
- British Ability Scales (BAS), 321
- Durrell reading fluency, 348
- France Primary Reading, 321
- Gates-MacGinitie, 336, 378
- Gray Oral Reading Test, 378, 385
- Kaufman reading and spelling tests, 192
- Metropolitan Reading Tests, 227, 381–382
- Neale reading test, 183, 185, 188, 199
- Stanford reading test, 133, 354
- Wide Range Achievement Test (WRAT), 135, 177, 179, 194, 230, 336, 354, 372
- Woodcock-Johnson reading test, 194–195, 205
- Woodcock Reading Mastery, 123, 232, 342, 344–345, 375, 376, 380, 383
- Vernon spelling test, 183, 185, 188
- Receptive vocabulary in infants and children, 11, 44, 86, 113, 116, 119, 130
- Reciprocal causality in speech
- perception/production, 88, 92, 171
- Research methodology (general), 211–224, 245–261

- Rhyme judgment and analysis, 113, 115, 117–118, 122–123, 128, 136, 138
 onset-rime units, 129, 139–141
- Roswell-Chall Auditory Blending Tests, 143
- Scientific theory, 14, 214, 218, 411
 Bacon's Idols, 15–16
 Deductive theories, 15, 138–139, 216, 237, 410–412, 424–425
 Inductive theories, 14, 16, 81, 413, 424
 Inductive theory of language development and reading, 413–426
- Segmenting speech sounds
 onset-rimes, 36–37, 42
 phonemes, 29–31
 syllables, 29–31, 42
 words, 30
- Semantics, 11, 12, 118, 182
 measurement of, 114–115, 117, 180–181, 183, 190
- “Shared environment” (in heredity research), 12, 272–273, 276–281, 361, 409, 419
- Slow readers, 391–406, 409, 421–422
 cross-cultural studies of, 387–400
 decoding accuracy in, 392–393, 395
 IQ and, 393, 395
 naming speed and, 394–395
 paired-associate learning in, 396, 406
 phoneme awareness in, 395–396
 sex differences and, 393
 spelling skill in, 393–394
- Speaking rate, 400–401
- Specific language impairment, 103–104, 178, 180–189, 198–199, 263, 416
 sex differences and, 180
 reading skill and, 183–186
- Speech discrimination in poor readers, 228–244
- Speech perception in “noise,” 238–243
- Stage models of development, 217
- Statistics/statistical tests, 218–222
 binomial distribution, 219–220
 cluster analysis, 190
 correlational statistics, 216, 218, 220 (*see also* Correlational research)
 discriminant analysis, 270
 inferential statistics, 214, 218
 normal distribution/normal curve, 219–220
 probability estimate, 219
 random selection and assignment, 218, 221, 222
 standard deviation, 216, 220
- Syntax, 11, 12, 112, 182, 183, 329–335
 awareness of, 118, 121, 125
 cloze task, 351
 in-house tests and, 334, 341–343, 334
 measurement of, 113–114, 117–118, 121, 180–181, 184, 190
 memory and, 331–332, 334, 336, 338, 339, 344, 356–357
 open and closed class words, 331, 333
 phrase structure grammar, 330, 333–334
 reading and, 335–357, 405, 422–423
 relative clause sentences, 351
 standardized test of (*see* Language tests)

- Tallal's repetition task, 100–103, 108, 109–110, 227–230, Appendix 1
- Test construction (general principles)
 confounding variables, 251–252
 data conversion, 250–251
 reliability, 248, 425
 sampling, 249
 validity, 248
- Training studies. *See Early Reading Instruction* for review
- Twin studies, 106–109, 272–273, 275–276, 316–317, 419
- Universal education, 4, 6, 14
- Verbal memory. *See also* Vocabulary
 age and, 287–290
 acquisition phase, 298–299
 incidental learning, 287, 292
 intentional learning, 287, 292
 IQ and, 290–291
 limited capacity theory of, 288
 meaning and, 284
 memory span of, 285, 287, 289, 292, 294, 336
 memory systems in, 284–286
 modes of remembering, 286–287, 355
 paired-associate learning, 291 (*see also* Naming speed)
 recall, 286, 296
 recognition, 286, 302
 sex differences and, 291–293, 313
 syntax and (*see* Syntax)
 word familiarity and, 289
- Verbal memory and reading
 acoustic confusion and short-term memory, 300–314, 326–327
 echoic memory, 374–375
 memory span, 344–345, 346, 348, 350, 374, 422,
 nonword repetition test and, 314–326, 327, 345
 paired-associate learning, 296–300, 326, 365, 422
 short-term memory, 294–296
 working memory, 344–345, 352, 355, 356
- Vision physiology and reading, 406–408
 sex differences in, 407
 transient and sustained visual systems, 406–407
- Visual recognition memory/pattern recognition, 22, 33
- Vocabulary, infancy/childhood
 early speech and, 157
 expressive, 12
 norms, 158–159, 164
 receptive, 51, 113
- Vocabulary and genetics, 272–276, 419–420
 adoption studies, 274–276
 “shared environment” impact, 276–281
 twin studies, 272–274
- Vocabulary tests (standardized)
 British Picture Vocabulary Test (BPVT), 181, 183, 184, 186
 English Picture Vocabulary Test (EPVT), 137
 Peabody Picture Vocabulary Test (PPVT), 176, 177, 191–192, 194–195, 232, 238, 252–253, 264–267, 269, 270–271, 336, 342–346, 348, 376, 378
 Stanford vocabulary test, 266, 267

- Vocabulary tests (standardized)
 - (cont.)
 - Wechsler Intelligence Scale for Children, vocabulary subtest, 266, 268
 - Vocabulary and reading, 264–272
 - receptive versus expressive vocabulary link, 265, 271–272
 - Voice-onset latency. *See* Naming speed
 - Voice-onset time (speech production/perception), 45, 47, 60, 67–68, 89
 - Vowel contrasts
 - short-medium-long, 91
 - pitch differences in, 93–94
 - Writing systems, 2, 9, 24–27, 47
 - evolution model of, 25
 - Word boundary consonants as phonotactic clues, 49, 94
 - Word familiarity effect
 - age of acquisition measurement, 70–72
 - children and, 64, 70–72, 74–76, 79
 - gestural theory of, 81
 - infants and, 48–50
-