

Subject Index

- Abstract letter detector, 551
- Acquisition-focused associative model, 369–373
 - conditioned inhibition, 372
 - cue and outcome durations, 371
 - element emphasized, 373
 - genetic and experiential predispositions, 370–371
 - information values, 372–373
 - objective contingency, 371
 - reinforcement theory, 371–372
 - response rules, 372
 - spatiotemporal contiguity, 371
 - stimulus salience/attention, 370
 - temporal window of analysis, 373
- Action selection
 - definition, 295
 - delays/errors, 295
 - discrete and continuous models, 298–299
 - Eriksen flanker task, 307
 - Hick-Hyman law, 300–301
 - historical background, 296–297
 - human information process, 296
 - informative precues, 306–307
 - methodological and modeling issues, 297
 - power law and practiced mapping, 313
 - psychological refractory period effects, 311–312
 - response-effect compatibility, 307
 - sequential effects
 - distractor inhibition, 310
 - fan effects, 305
 - Hick-Hyman law, 305
 - negative priming, 310
 - repetition benefits, 304–305
 - response repetition, 304
 - RT distribution analyses, 309–310
 - set-size effects, 305
 - stimulus repetition, 305
 - Simon effect, 308–309
 - speed-accuracy trade-off, 299–300
 - stimulus-response compatibility, 302–304
 - Stroop color-naming task, 307
 - task mixing and mappings, 310–311
 - transfer, 313
 - warning effects, 306
- Action space, 220
- Adaptive Character of Thought-Rational (ACT-R), 440, 647–648
- Additive-factors method, 297
- Aerial perspective, 215
- Affect-as-information (AAI) models, 63–64
- Affect infusion model (AIM)
 - mood congruence, 64
 - mood-dependent memory, 72
- Affect priming model, 62–63
- Affine transformations, 219
- Agnosia, 187–189
- Alien hand syndrome, 15
- Alliesthesia, 36
- Alzheimer's disease, 26
- Amnesia, 8, 9, 15
- Amygdala, 48–49
- Animal cognition
 - bat's hunting behavior, 396
 - behaviorism, 393
 - bisection procedure, 403
 - cognitive ethology, 394
 - decision making, 396
 - delayed conditioning procedure, 403
 - discrimination learning and categories, 398–399
 - ecologists, 394
 - ethology, 394
 - evolution, 413–415
 - evolutionary biologists, 395
 - evolutionary psychologists, 395
 - explicit counting studies, 402
 - instinct, 396
 - internal representation, 396
 - interval timing, 402–403
 - The Language Instinct*, 395

750 Subject Index

Animal cognition (*continued*)

- language learning, 395, 410–412
- memory, 403–405
- modules, 395
- numerical abilities, 401–402
- operant box, 403
- order irrelevance principle, 402
- peak procedure, 403
- perception, 397
- problem solving, 396
- serial learning, 400–401
- spatial learning, 393, 405–406
- standard social science model, 395
- temporal generalization, 403
- theory of mind, 409–410

Anisotropy, 168

Anosognosia, 15–20

Anterior cingulate cortex (ACC), 652

Anterograde amnesia, 479

Anton's syndrome, 15

Apperceptive agnosia, 188

Applied experimental psychology

- aging, 697–698
- aviation psychology, 696
- closely related disciplines, 692
- communicating and effects, 703–704
- eyewitness and earwitness testimony, 694–695
- field status, 692
- Frans Donders, 690
- future challenges, 699–704
- health sciences, 692
- highway safety, 696–697
- history of distinction, 688
- human error, 692
- human reaction time, 689
- information sciences, 692
- interdisciplinary field, 692
- laboratory and field experimentation, 692
- medicine and health, 697
- memory enhancement, 693–694
- Nevil Maskelyne, 689
- personal equation, 689
- person–computer interaction, 695–696
- postwar developments, 691
- press releases, 688
- professional organizations, 704
- psychological theory, 699–700
- situation awareness, 698–699
- social, 700–701
- technology, 701–703
- textbooks and reviews, 704
- in World War II, 690–691

Associationism, 22

Associationist psychology, 21

Associative agnosia, 188

Attentional skill, 499

Attention and automaticity, 497–498

Attraction effects, 675

Audition

- auditory nerve, 128–130
- central auditory nervous system, 124, 132
- cochlear implants, 147
- complex vibrations, 121–122
- computational models, 131
- decibel, 123
- detect, 120
- discrimination, 120, 136
- functional neural imaging, 132
- future research, 147–149
- inner ear, 125–128
- masking, 134–135
- middle ear, 125
- outer ear, 125
- reflections, 123
- reverberation, 124
- segregate, 120
- signal envelope, 122
- signal fine-structure, 122
- simple vibrations, 120–121
- sound propagation, 122–123
- sound shadow, 124
- sound-source localization, 136–138
- sound-source perception
 - auditory scene analysis, 138
 - auditory-stream, 139
 - CANS, 138–139
 - common modulation, 142–145
 - informational masking and auditory attention, 145–146
 - models/theories of, 146–147
 - onsets and offsets, 142
 - pitch and timbre, 140–141
 - profile-analysis, 141–142
 - spatial separation, 139–140
 - spectral separation, 139
 - temporal fine-structure and envelope, 145
 - temporal separation, 139
- standing wave, 123
- temporal modulation transfer function, 135
- thresholds of hearing, 133
- transient signals, 122
- transmission, 123
- Weber fraction, 136

Auditory image model (AIM), 131

Augmentation, 364

Autobiographical memory

- diary studies, 483–485
- encoding variables, 486
- event cuing technique, 483

- flashbulb memories, 485
- Galton word-cuing technique, 483
- generic personal memories, 483
- positivity bias, 485
- priming paradigms, 483
- prior events, 484
- recalled events, 485
- retention interval, 486–488
- retrieval, 489–490
- simulated autobiographical events, 483
- vivid memories, 485
- Autonomous model, 525
- Backward priming, 461–462
- Band-reject noise, 134
- Barber-pole effect, 216
- Bartlett, Frederic, 690
- Basolateral amygdaloid complex (BLA), 48–49
- Batesian mimicry, 40
- Bats, 132, 148
- Bayes' theorem, 664–665
- Bed nuclei of the stria terminalis (BNST), 49
- Behavior system approach, 414
- Behavioral momentum theory, 384
- Behaviorism*, 5
- Bimanual task, 339
- Binding criterion, 116
- Binding problem, 111
- BLA. *See* Basolateral amygdaloid complex (BLA)
- The Black Cloud*, 228
- Blindness
 - aids, 172–173
 - change, 170
 - consciousness, 10
 - two-dimensional patterns, 164–165
- Blindsight, 19
- Blindwalking, 221–222
- Blocking, 364
- Bound encoding of the aggregate language environment (BEAGLE) Model, 454
- Braille, 157, 164, 172
- Burmese red junglefowl, 38
- Camouflage, 40
- Capacity-constrained construction-integration model, 594–595
- Capacity-sharing models, 312
- Cartesian theater, 6
- Central auditory nervous system (CANS), 132, 138–139
- Central tendency approach, 614
- Change blindness, 170, 285
- Chapanis, Alphonse, 690
- Childhood amnesia, 484
- Choice-reaction tasks, 505
- Chunking, 400
- CMR. *See* Comodulation Masking Release (CMR)
- Cocktail party effect, 139
- Cognition
 - affect, 62
 - eyewitness memory, 74–75
 - fundamental attribution error, 75–76
 - history, 61
 - implications, 78
 - interpersonal communication, 77–78
 - mood congruence
 - AAI model, 63–64
 - affect infusion model, 64, 67–68
 - affective priming, 63
 - associations and inferences, 65
 - attention and learning, 64–65
 - memory, 65
 - person perception, 66–67
 - responding to requests, 67
 - self-disclosure, 67
 - self-judgments, 65–66
 - social behaviors, 67
 - mood-dependent memory
 - affect infusion model, 72
 - implicit tests, 71–72
 - memory deficits, 68
 - mood Factors, 69–70
 - task factors, 68–69
 - positive and negative affect, 73–74
 - skepticism and detection of deception, 76
 - stereotypes, 76
- Cognitive constructivism, 85–86
 - vs. computational constructivism, 86
- doctrine of unconscious inference, 86
- illusion and veridicality, 95
- modularity, 93–94
- optical stimulation information, 89–90
- perception and cognition, 92
- percepts and neurons, 88
- representation, 91
- representational transformation, 91
- visual system function, 87
- Cognitive economy, 610–611
- Cognitive psychology, 296
- Cognitive revolution, 5
- Cognitive skill, 505–506
- Cognitive systematicity, 609
- Cold-pressor stimulation, 16
- Collaborative action-based production system (CAPS), 594
- Communication, 111
- Comodulation Masking Release (CMR), 142–143
- Comparison stimuli, 404

752 Subject Index

- Component letters, 550–551
- Compound-cue models, 456
- Comprehension
 - domain knowledge, 585
 - inferences, 583–584
 - learning text, 584
 - text factors, 585–586
 - text memory, 582–583
- Computational constructivism
 - vs. cognitive constructivism, 86
 - modularity, 93
 - optical stimulation information, 90
 - origins of, 86
 - perception and cognition, 92
 - percepts and neurons, 88–89
 - representation, 91
 - representational transformation, 91
 - stages, 86
- Concepts and categorization
 - category boundaries, 616–618
 - cognitive economy, 610–611
 - communication, 610
 - components of thought, 609
 - equivalence classes, 608
 - inductive predictions, 609–610
 - language, 622–624
 - perception, 620–621
 - prototypes, 614–616
 - rules, 612–613
 - theories, 618–619
- Conditional responses (CRs), 41
- Conditional stimuli (CS), fear motivation, 41
- Conditional taste aversion (CTA), 37
- Consciousness, 409
 - access awareness, 286
 - anosognosia, 15–20
 - attentional blink, 285
 - awareness, 289
 - biological materialism, 27
 - change-blindness, 285
 - conscious content, nonconscious basis of, 12–13
 - disorders of consciousness, 14
 - dissociative disorders, 15
 - exogenous cues, 287–288
 - features, 3–4
 - folk theory, 6–7
 - free will and action, 13
 - Frith's theory, 15
 - function of, 16–17
 - future of, 26–27
 - global workspace theory, 17
 - history of, 4–5
 - hypnosis, 16
 - hysterical dissociations, 15
 - illusions of control, 14
 - implicit memory, 12
 - inattentional blindness, 284–285
 - memory illusions, 13
 - negative priming, 11
 - neuroscientific methodologies
 - associationism, 22
 - blindsight, 19
 - dynamic cluster theories, 21–22
 - evolution of, 17
 - hemineglect, 19–21
 - neural theory, 21
 - proto-self, 26
 - rivalrous stimulus, 18
 - self-representation, 25–26
 - sensory imagery and binding problem, 22–24
 - single-cell recording, 18
 - thalamocortical loops, 24–25
 - visceral self-perception, 25
 - perception, 286–287
 - perceptual construction, 9–10
 - selective attention, 13–14
 - self-monitoring, 14
 - subliminal priming, 10–11
 - subliminal psychodynamic activation, 12
 - unconscious perception, 7–9
 - unconscious priming, 288
 - unilateral neglect, 285
 - visible spatial cues, 288
- Conscious priming, 462–463
- Construction-integration model, 593–594
- Contrast reduction, 215
- Conversion disorders, 15
- Counterconditioning, 365
- Craik, K. J. W., 690
- Creole, 412
- Criterion, 104
- Cross-modal information, 255–256
- CS-preexposure effect, 362–363
- Cued recall, 474
- Cue-limited models, 373
- Cues
 - competition, 364
 - depth, 213, 215–219
 - distal, 406
 - intramaze, 406
 - landmark, 406
 - sexual motivation, 50–51
- Cumulative prospect theory, 673
- Decibel (dB), 123
- Decision making
 - dynamics, 678–679
 - experience-based decision making, 677–678

- intertemporal, 674–675
 - multi-attribute and multi-alternative, 675–677
 - neuroscience, 680
 - under risk and uncertainty, 671–674
- Declarative rules, 640
- Deductive reasoning, 631
- Deep processing tasks, 478
- Deformation, 218
- Degraded contingency effect, 362
- Déjà vu, 487
- Delayed matching to sample (DMTS), 404
- Delayed reaction, 403
- Depression, 3
- Depth perception
 - cues
 - aerial perspective, 215
 - affine transformations, 219
 - binocular disparity, 213–215
 - dynamic occlusion, 217
 - horizon ratio, 215
 - intrinsic constraints, 218
 - inverse-projection problem, 213
 - linear cue combination model, 218
 - linear perspective, 216
 - motion, 217–218
 - occlusion, 215–216
 - ocular motor, 213
 - pictorial depth cues, 215–217
 - relative and familiar size, 216
 - shading, 217
 - signal-to-noise ratio, 219
 - structure from motion, 217–218
 - texture gradients, 216
 - distance, 220–223
- Digital computer and information theory, 5
- Direct and inferential mediation (DIME) model, 595–596
- Direction into velocity of articulators (DIVA) model, 249
- Direct perception, 222
- Direct priming, 460–461
- Discrete and continuous models, 298–299
- Dissociative identity disorder (DID), 15, 71
- Distal cues, 406
- Distortion product otoacoustic emissions (DPOAE), 127
- Distributed network models, 452–457
- Documents model, 596
- Dorsolateral prefrontal cortex (DLPFC), 503
- Dualism, 4–5
- Dual-process theory, 379–380
- Dual-route models, 303–304
- Dual-route theories, 526
- Duplex theory of sound-source localization, 136
- Dynamic connectionist models, 676
- Dynamic core, 25
- Dynamic-field theory, 259
- Dynamic touch, 163
- Dynamic transformations, 323, 345–347
- Echoic memory, 476
- Ecological realism, 86
 - illusion and veridicality, 94
 - modularity, 93
 - optical stimulation information, 90
 - perception and cognition, 92–93
 - percepts and neurons, 89
 - representation, 91
 - representational transformation, 92
 - visual system function, 87–88
- Ectothermy, 52
- Effective onset, 106
- Egan, James, 690
- Eigenvalues, 160, 163
- Electroencephalograms (EEGs), 300
- Emulation, 410
- Encoding specificity principle, 481
- Endothermy, 52
- Energy-detection model, 135
- Episodic memory
 - absolute frequency judgment, 475
 - cued recall, 474
 - encoding events, 476–479
 - free recall, 474
 - metamemory judgments, 475
 - paired-associate recall, 474
 - prior events encoding, 475–479
 - recognition, 475
 - relative recency judgments, 475
 - remember-know judgments, 475
 - retention of events, 479–480
 - retrieval factors, 480–482
 - serial recall, 474
 - source judgments, 475
- Equal-energy rule, 133
- Eriksen flanker task, 307
- Ergonomics Research Society, 691
- Escape/avoidance conditioning, 377
- Escape-from-fear (EEF) procedure, 48
- An Essay Towards a New Theory of Vision*, 86
- Event perception
 - dynamics, 225–226
 - heading/self-motion, 226–227
 - objects, approaching, 228–229
 - organization, 223–225
 - posture, visual control of, 227–228
 - vection, 227
- Event-related potentials (ERPs), 280, 300
- Expected utility (EU), 671
- Expected value (EV), 670
- Expert memory, 581

754 Subject Index

- Expression-focused models, 374–376
Extinction, 362
Eye movements
 acquisition, information, 562
 basic facts, 558–559
 integration, information, 562–565
 models, 569–570
 perceptual span, 559–561
Eyewitness memory, 74–75
- FABBS. *See* Federation of Associations in Behavioral and Brain Sciences (FABBS)
Familiar-size hypothesis, 222
Fast-adapting populations, 153
False memory, 476, 487
Fear, motivation
 defensive behavior, 43–49
 initiation of, 40–43
 pervasiveness of, 40–41
Federation of Associations in Behavioral and Brain Sciences (FABBS), 689
Feedback control map, 249
Feedback, 507–508
Fever, 54
Filter-bank model, 131
Fitts' law, 322
Fitts, Paul, 690
Flanagan, J. R., 691
Flashbulb memories, 485
fMRI. *See* Functional magnetic resonance imaging (fMRI)
Focus of expansion (FOE), 226
Folk theory, 6–7
Forced-choice tasks, 106
40-Hz hypothesis, 23–24
Forward priming, 461–462
Fourier analysis, 121
Free recall, 474
Free will, 13
Freezing, 46
Freudian slips, 13
Frith's theory, 15
FRUMP (AI program), 592
Fulcrum effects, 345
Functional magnetic resonance imaging (fMRI), 17, 132, 300, 503, 642
Functional sensitivity hypothesis, 228
Fundamental attribution error (FAE), 75–76
- Galton word-cuing technique, 483–485
Galvanic skin response (GSR), 11, 14
Gamma-band oscillation, 23–24
Garner, Wendell, 690
Gebhard, John, 690
Generalized matching law, 381
Generation effect, 68
Gestalt theory, 86
 optical stimulation information, 90
 perception and cognition, 92
 percepts and neurons, 89
 representation, 91
 representational transformation, 92
 visual system function, 87
Gestural theory, 253–255
Global workspace theory, 17
Golf-ball illusion, 160
GSR. *See* Galvanic skin response (GSR)
Guidance hypothesis, 507
- Habituation, 359
Hair-cell regeneration, 147–148
HAL. *See* Hyperspace Analog to Language (HAL)
Hangul, 553
Harvard Psychoacoustics Laboratory, 690
Head related transfer functions (HRTFs), 125, 137, 147
Hemineglect, 19–20
Hick-Hyman law, 300–301
Hierarchical motion organization, 224–225
Higher-order language process, 570
Highway Safety Act, 691
Homeostasis, 35
Horizon ratio, 215
Hybrid models, 458, 436–438
Hypermnesia, 481
Hyperspace Analog to Language (HAL), 453
Hypertext, 587–588
Hypnosis, 16
Hysteresis, 106
Hysterical dissociations, 15
- Iconic memory, 476
Ideal observer model, 101, 116
Ideomotor theory, 297
Illusions of control, 14
Image-matching process, 563
Implicit learning, 500–501
Implicit memory, 12
Impulse-variability models, 327
Inattention blindness, 10, 14, 284–285
Incentive learning, 379
Indirect perception, 87
Individual differences, skilled performance, 512–513
Inductive statistical techniques, 618
Inference learning task, 623
Informational masking (IM), 145–146
Information-processing theory, 88
Innate fear stimuli, 41–43
Insightful problem solving, 649
Instance theory, 497

- Instrumental conditioning
 - adjusting-delay procedure, 383
 - associative analyses, 378–380
 - choice acquisition, 383–384
 - concurrent chains, 382
 - ecological/economic analyses, 385
 - functional analyses, 380–382
 - general models, 383
 - law of effect, 376
 - vs. Pavlovian conditioning, 377
 - reinforcement schedules, 377
 - resistance to change, 384–385
 - temporal discounting, 383
 - three-term contingency, 376–377
 - variability, 383
- Interactive-activation (IA) model, 457–458
- Intercalated cells (ITC), 49
- Interpersonality amnesia, 71
- Intramaze cues, 406
- Intraparietal sulcus (IPS), 282
- Intrinsic constraints (IC), 218
- Inverse-projection problem, 213
- Ironic thought suppression, 13
- Isotropy, 216
- Journal of Experimental Psychology: Applied*, 688
- Judas Eye, 10
- Judgment
 - calibration, 666–668
 - coherence, 662–667
 - dual-process models, 669–670
 - game theory, 660
 - group decision making, 660
 - heuristics approaches, 668–669
 - individual decision making, 660
 - optimal strategy, 660
 - rational principle, 660
 - research, 661
 - uncertainty and values measurement, 661
 - uncertainty assessment, 661–662
- Kana system, 553
- Kinesthetic system, 153
- Knowledge representation model, 597–598
- Kryter, Karl, 690
- Lag effects, 461
- Landmark cues, 406
- Landscape model, 595
- Language acquisition device, 412
- Language comprehension and production
 - interactive and modular view, 523
 - printed word recognition, 526–527
 - sentence production, 535–539
 - sentences and discourse, 527–532
 - serial quality, 523
 - single word production, 532–535
 - spoken word recognition, 524–525
- Latent inhibition, 362
- Latent semantic analysis (LSA), 454, 597–598
- Lateral geniculate nucleus (LGNd), 183–184
- Lateral inferior prefrontal cortex (LIPFC), 652
- Learned-fear stimuli, 41
- Learning and conditioning
 - animal learning, 359
 - biological intelligence and events, 357
 - complex cognition, 358
 - instrumental learning, 359
 - instrumental responding, 376–385
 - mechanism and mentalism, 358
 - multiple cues, 364–366
 - natural selection, 358
 - Pavlovian responding models, 368–376
 - response potential, 357
 - single stimulus phenomena, 359
 - two stimulus phenomena, 360–364
- Letter detector, 551
- Letter order coding, 551
- Levels-of-processing (LOP) effect, 477
- Lexical memory, 237
- LGNd. *See* Lateral geniculate nucleus (LGNd)
- Licklider, J. C. R., 690
- Likelihood ratio, 100, 113
- Linear cue combination model, 218
- Linear optical trajectory (LOT) model, 229
- Liolumus*, 52
- LIPFC. *See* Lateral inferior prefrontal cortex (LIPFC)
- List chunk, 401
- Lizard, 52
- Load theory, 271–274
- The Logic of Perception*, 87
- Logogen-based models, 457
- Long-term working memory (LTWM), 580–581
- Lower threshold of motion (LTM), 106
- Mackworth, Norman, 690
- Mark test, 409
- Masking, 134–135, 139, 145–146
- Masking-level difference (MLD), 139
- Maximum-likelihood model, 169
- McClelland and Rumelhart model, 551
- MDI. *See* Modulation Detection Interference (MDI)
- Medial prefrontal cortex (mPFC), 49
- Mediated priming, 460–461
- Melton, Arthur, 690
- Memory
 - accessible information, 474
 - animal cognition, 403–405

756 Subject Index

Memory (*continued*)

- autobiographical, 483–490
- available information, 474
- encoding, 473
- episodic memory, 474–480
- implicit, 12
- mood congruence, 65
- prospective, 404
- reference, 404
- retrieval, 473
- retrospective, 404
- sensory, 420–424
- short-term working memory
 - capacity limitations, 428–429
 - cue-driven retention, 432–433
 - decay reconsideration, 428
 - decay *vs.* interference, 426–427
 - episodic buffer, 435
 - forgetting, 425–426
 - hybrid models, 436–438
 - limits of attention, 428–430
 - limits of time, 429–430
 - phonological loop model, 434
 - retrieval dynamics, 431–432
 - temporal distinctiveness, 427–428
 - unitary models, 438–440
 - visuo-spatial sketchpad, 434–435
- storage, 473
- working, 404

Mental practice, 508

Message, 535

Metamemory judgments, 475

Miller, George, 690

Mimetic, 363

Minerva model, 616

Minimal-audible-field (MAF), 133

Minimal-audible-pressure (MAP), 133

Misinterpreted necessity model, 641

Mismatch negativity (MMN), 422–423

Misoplegia, 20

MLD. *See* Masking-level difference (MLD)

Modularity, 93–94

Modularity of Mind, 93

Modulation Detection Interference (MDI), 142–145

Monogamy, 49

Mood congruence

- AAI model, 63–64
- affect infusion model, 64, 67
- affective priming, 63
- associations and inferences, 65
- attention and learning, 64–65
- memory, 65
- person perception, 66–67

- responding to requests, 67
- self-disclosure, 67
- self-judgments, 65–66
- social behaviors and trait anxiety, 67

Mood-dependent memory (MDM)

- affect infusion model, 72
- dissociative identity disorder, 71
- implicit tests, 71–72
- memory deficits, 68
- mood factors, 69–70
- task factors, 68–69

Morgan, Clifford, 690

Motion

- absolute, 224
- biological, 225
- common, 224
- dynamic occlusion, 217
- extended body, 226
- heading, 226–227
- hierarchical organization, 224–225
- particle, 226
- posture, visual control of, 227–228
- relative, 224
- structure from motion, 217–218
- surface segregation, 223–224
- vection, 227

Motivated retrieval, 490

Motivation

- fear
 - functional behavior system, 43–44
 - innate fear stimuli, 41–43
 - learned defensive behavior, 48–49
 - learned-fear stimuli, 41
 - observational learning, 43
 - pervasiveness of, 40–41
 - predatory imminence continuum theory, 44–48
 - primary and secondary defensive strategies, 40

feeding

- alliesthesia, 36
- appetitive behavior, structure of, 38–39
- appetitive *vs.* consummatory behavior, 38
- cost of, 36
- depletion/repletion model, 35
- free-feeding procedure, 35
- homeostasis, 35
- incentive aspects of, 37–38
- rat behavior system, 39–40
- sensory-specific satiety, 37
- session procedure, 35

functional behavior system

- definition of, 33
- development of, 34

sexual

- goal of, 49

- organization of behavior system, 51–52
- reproductive signals, 50–51
- temperature, 52–54
- theories of behavior, 32–33
- Motor control
 - coordination of
 - coupling levels, 340–343
 - structural constraints, 337–340
 - task constraints, 337–338
 - flexibility
 - dynamic transformations, 345–347
 - visuo-motor transformations, 343–345
 - preparation, 324–329
 - problems, 320–324
 - sensory information, 329–337
- Motor program, 326
- Motor skills, 506–507
- Motor theory, 255
- Moving room, 228
- Müller-Lyer illusion, 331
- Multimedia, 588–590
- Multiple personality disorder, 15
- Multistage activation models
 - interactive-activation model, 457–458
 - logogen-based models, 457
- Muscle activation, 320
- Muscle force, 320
- Nader, Ralph, 691
- Naïve realism, 6
- Narrow-band noise, 122, 142
- Negative mediation, 367
- Negative occasion setting, 362
- Negative reinforcement, 377
- Neodissociation theory, 16
- Nerve injury, 157
- Neural correlate of consciousness (NCC), 23
- New Essays on Human Understanding*, 96
- New Look movement, 92
- Next Generation Air Traffic Control System, 696
- Noise, 122
- Nonword ratio (NR), 459
- Nuclear Regulatory Commission, 691
- Observational conditioning, 410
- Observational learning, 43
- Oculomotor models, 569
- Open-loop strategy, 333
- Optacon, 164
- Optical acceleration cancellation (OAC) model, 229
- Optical covariation, 111
- Optic flow, 217
- Optimality theory, 241
- Order irrelevance principle, 402
- Orientation difference, 112–115
- Orthography, 553
- OSCillator-based Associative Recall (OSCAR), 438
- Outcome-limited associative models, 373
- Overshadowing, 364
- Owls, audition, 132, 148
- Oxygenation, 26
- PAG. *See* Periaqueductal gray (PAG)
- Paired-associate learning task, 620
- Paired-associate recall, 474
- Pandemonium model, 197
- Paper-and-pencil tasks, 19
- Parafoveal-on-foveal effects, 565
- Parallel distributed processing (PDP) system, 555, 644–645
- Paralysis, 15
- Parchment-skin illusion, 169
- Partial reinforcement, 362
- Particle motions, 226
- PAS. *See* Precategorical acoustic storage (PAS)
- Pavlovian conditioning
 - acquisition-focused associative models, 370–373
 - contingency, 361–363
 - cue and outcome duration, 363
 - expression-focused models
 - acquisition rules, 375
 - comparator models, 374–375
 - conditioned inhibition, 375
 - contingency models, 374
 - retrospection revaluation, 375–376
 - mediation, 366–368
 - multiple cues, 364–366
 - predispositions, 360
 - response topology and timing, 363
 - salience/attention, 360
 - single stimulus phenomena, 359–360
 - spatiotemporal contiguity, 360–361
 - stimulus generalization, 363–364
 - units of analysis, 368–369
- Perception
 - acoustic/auditory accounts, 252–253
 - action performance, 336
 - animal cognition, 397
 - automatic activation, 336
 - biological movements, 336
 - blindsight, 335
 - coarticulation, 252
 - cognitive and sensorimotor system, 335
 - cross-modal information, 255–256
 - dissociations, 335
 - dorsal stream, 335
 - event perception (*see* Event perception)
 - gestural theories, 253–255
 - mirror-neurons, 336

758 Subject Index

Perception (*continued*)

- motor-evoked potentials, 336
- motor representations, 336
- motor resonance, 336
- motor theory, 255
- movement observation, 336
- speech variability, 256–259
- top-down effects, 256
- visual perception (*see* Visual perception)

Perception of the Visual World, 86

Perceptual defense, 10

Perceptual memory, 420

Perceptual skill, 504–505

Periaqueductal gray (PAG), 49

Peripheral dominance hypothesis, 228

Peromyscus maniculatus austerus, 42

Peromyscus maniculatus gambeli, 42

Personal space, 220

Phonology

- activation, 245
- competence, 237–242
- focus of attention, 236
- parity, 237
- perception
 - acoustic/auditory accounts, 252–253
 - coarticulation, 252
 - cross-modal information, 255–256
 - gestural theories, 253–255
 - motor theory, 255
 - speech variability, 256–259
 - top-down effects, 256
- planning, 242–246
- production, 246–250
- social activity, 236

Picture writing, 553

Pidgin, 412

Pinyin, 553

Pitch, 121, 140–141

Poetzl phenomenon, 13

Polar bear, 52–53

Pollack, Irwin, 690

Pollyanna principle, 485

Polyandry, 49

Polygyny, 49

Ponzo illusion, 94

Positive mediation, 367

Positive occasion setting, 362

Positive reinforcement, 377

Positron-emission tomography (PET), 132, 300, 503

Poststimulus-time-histograms (PSTH), 128–130

Postvocalic consonants, 243

Potential, 364

Practice and transfer task, 501

Precategorical acoustic storage (PAS), 424

Predatory imminence continuum theory (PICT)

- behavioral transitions, 47–48
- circa-strike situation, 46
- postencounter defensive behavior, 46
- pre-encounter defensive behaviors, 44–46
- response selection rule, 44
- safe burrow, 44

Presbycusis, 133

Primacy model, 436–437

Priming

- affective, 63
- negative, 11, 310
- paradigms, 483
- semantic
 - automatic *vs.* strategic priming, 458–460
 - compound-cue models, 456
 - conscious *vs.* unconscious, 462–463
 - distributed network models, 452–457
 - forward *vs.* backward, 461–462
 - hybrid model, 458
 - lag effects, 461
 - language processing model, 458
 - list context effects, 463–464
 - mediated *vs.* direct, 460–461
 - multistage activation models, 457–458
 - prime task effects, 463
 - spreading activation models, 456
 - stimulus quality, 464–465
 - stimulus repetition, 464–465
 - verification model, 458
 - word frequency, 464–465
 - word recognition model, 458
- subliminal, 10–11

Principle of transfer-appropriate processing, 482

Proactive interference, 404, 479

Probabilistic mental model, 667

Probability heuristic model (PH Model), 639

Problem solving

- ACT-R model, 647–648
- cognitive architecture, 643
- factors, 652–653
- insight, 648–650
- mental representation and strategy, 644–645
- neuroscientific evidence, 651–652
- Newell and Simon's theory, 645–647
- situated/embodied, 650–651
- technology, 651

Procedural learning, 473

Procedural memory, 502–504

Procedural rules, 640

Production rule model, 679

Prosody, 532

Prosopagnosia, 188

Prospective memory, 404

- Prospect theory, 672
 Proto-self, 26
 Pseudowords, 550
 Psychological process model, 592–593
 Psychological refractory period (PRP) effects, 311–313
Psychological Science in the Public Interest, 688
 Psychophysical isomorphism, 110
 Psychophysical tuning curves, 134
 Punishment, 377
 Puzzling deficits, 19–21
- Radial-tangential illusion, 168
 Rank dependent utility theory, 673
 Rapid serial visual presentation (RSVP), 270, 281
 Rate expectancy theory (RET), 374
 Rats, 53–54
 Reading
 active filler strategy, 529
 arguments and adjuncts, 528
 auditory sentence, 530
 constraint-based theories, 531
 contextual appropriateness, 530
 eye movements
 acquisition, information, 562
 basic facts, 557–559
 integration, information, 562–565
 models, 569–571
 perceptual span, 559–562
 eye-tracking, 528
 frequency, 529
 garden path, 528
 language processing, 530
 late closure, 528
 long-distance dependencies, 529
 minimal attachment, 528
 referential theory, 530
 resonance process, 531
 sentence comprehension, 529
 text comprehension, 531
 visual world paradigm, 530
 word identification
 automaticity, word encoding, 552
 feature model, 549
 nonalphabetic languages, 553
 pattern recognition, 549
 sound codes, 553–557
 template model, 549
 visual words, 549
- Reasoning
 cognitive effects, 643
 context, instructions and relevance, 642–643
 dual-process theories, 640–642
 emotion, 643
 evolutionary theories, 636–638
 fundamental mechanism, 632
 heuristic theories, 638–640
 rule theories, 632–633
 semantic theories, 633–636
 unified theory, 640
- Receiver operating characteristic (ROC), 97–102, 104
 Recoding, 476
 Recognition by components (RBC) theory, 197–200
 Redundancy exploitation, 111
 Redundancy reduction, 111
 Reference element, 113
 Reference memory, 404
 Reicher-Wheeler paradigm, 550
 Reinforcement learning model, 678
 Relatedness proportion (RP), 459
 Remember-know judgments, 475
 Reminiscence bump, 486
 REM sleep, 3, 25
 Reordered access model, 568
 Rescorla–Wagner learning model, 678
 Residual meta-analysis, 382
 Response selection, 295, 505
 Response summation, 365
 Retardation test, 367
 Retention, 404
 Retinal invariance hypothesis, 228
 Retrieval, 404
 Retroactive interference, 404, 479
 Retrograde amnesia, 479
 Retrospective memory, 404
 Retrospective revaluation, 368
Reviews of Human Factors and Ergonomics, 689
 RSVP. *See* Rapid serial visual presentation (RSVP)
 Rubber-hand illusion, 169
- SAGAT. *See* Situation Awareness Global Assessment Technique (SAGAT)
 Saturation, vection, 227
 Scalar-expectancy theory (SET), 374
 Scale independent memory, perception, and learning (SIMPLE) model, 439
 Schema-based models, 592
 Schizophrenia, 3
 Seasonal affective disorder (SAD), 105–106
 Selection tests, 699
 Selective attention
 attentional capture, 276–277
 consciousness
 access awareness, 286
 attentional blink, 285
 awareness, 289
 change-blindness, 285
 exogenous cues, 287–288

760 Subject Index

Selective attention (*continued*)

- inattentional blindness, 284–285
 - perception, 286
 - unconscious priming, 288
 - unilateral neglect, 285
 - visible spatial cues, 288
 - contingent capture hypothesis, 276
 - vs. early selection
 - behavioral studies, 269–270
 - feature-based approach, 270–271
 - load theory (*see* Load theory)
 - neurophysiological studies, 268–269
 - focusing attention, 281
 - goal-directed and stimulus-driven guidance
 - event-related brain potentials, 280
 - target feature, 279
 - hidden attentional control, 277–278
 - intertrial priming, 278–279
 - salience-based view, 275–276
 - working memory, 281–284
- Selective comparison, 640
- Selective encoding, 640
- Selective scrutiny model, 641
- Self-consciousness, 409
- Self-directed behavior, 409
- Self-disclosure, 67
- Self-monitoring, 14
- Self-recognition, 409
- Semantic memory, 472
- associative strength and typicality, 451
 - distributed network models, 452–453
 - false statements and similarity, 451–452
 - feature-comparison theory, 450–451
 - hyperspace analog to language, 453–454
 - latent semantic analysis, 454
 - spreading-activation theory, 450
 - topic model, 454–455
- Semantic priming
- automatic vs. strategic priming, 458–460
 - compound-cue models, 456
 - conscious vs. unconscious, 462–463
 - distributed network models, 456–457
 - forward vs. backward, 461–462
 - hybrid model, 458
 - lag effects, 461
 - language processing model, 458
 - list context effects, 463–464
 - mediated vs. direct, 460–461
 - multistage activation models, 457–458
 - prime task effects, 463
 - spreading activation models, 456
 - stimulus quality, 464–465
 - stimulus repetition, 464–465
 - verification model, 458

word frequency, 464–465

word recognition model, 458

Sensory information, 329–337

Sensory memory

- characteristics, 423–424
- information persistence, 420
- longer-term modality-specific memory, 420
- measurement techniques
 - backward masking, 421
 - mismatch negativity, 422–423
 - partial report techniques, 421–422
 - synchrony judgment task, 420
 - temporal integration task, 421

Sensory preconditioning, 366

Sentence production

- agreement, 537
- automatic checking process, 539
- functional structure, 536
- grammatical encoding, 536
- lexical retrieval process, 535
- linguistic and psycholinguistic research, 536
- listeners' information needs, 536
- message generation, 535
- morphological forms, 537
- phonological words, 538
- positional processing, 536
- pronouns, 536
- prosodic structure, 538
- semantic variables, 537
- speech monitoring, 538
- speech planning, 538
- structural priming, 537

Sequence learning, 501

Sequential-sampling models, 299, 676

Serial learning, 400–401

Serial reaction time (SRT) task, 503

Serial recall, 474

Series chunk, 401

Sexual motivation

- goal of, 49
- organization of behavior system, 51–52
- reproductive signal, 50–51

Shallow processing tasks, 478

Short-term memory

- capacity limitations, 428–429
- cue-driven retention, 432–433
- decay reconsideration, 428
- decay vs. interference, 426–427
- episodic buffer, 435
- forgetting, 425–426
- hybrid models, 437–438
- limits of attention, 430–431
- limits of time, 429–430
- phonological loop, 434

- retrieval dynamics, 431–432
- temporal distinctiveness, 427–428
- unitary models, 438–440
- visuo-spatial sketchpad, 434–435
- Signal detection based models, 667
- Signal-detection theory, 102–104
- Signal-to-noise ratio (SNR), 219
- Sign stimuli, 50
- Simple scalable utility models, 675
- Single cells, 18
- Single neuron doctrine, 89
- Single word production, 532–535
- Singular value decomposition (SVD), 454
- Sinusoidal vibration, 121
- Situated (embodied) problem solving, 650
- Situation awareness (SA), 698–699
- Situation Awareness Global Assessment Technique (SAGAT), 699
- Size-distance invariance hypothesis, 222
- Skill acquisition
 - Ackerman's model, 513
 - expertise, 513–515
 - factors, 508–512
 - general principles, 504–507
 - individual differences, 512
 - phases of, 512
 - stages, 496–497
- Skilled memory theory, 515
- Sleight, Robert, 690
- Sloman's analysis, 613
- Slow-adapting populations, 154
- Social-contract algorithm, 636
- Soul, 4
- Sound codes
 - access, 554–556
 - word meaning, 556–557
- Sound shadow, 124
- Spatial-compatibility effects, 301–302
- Species-specific defensive reaction (SSDR), 44
- Speech. *See* Phonology
- Speech variability, 256–259
- Spontaneous otoacoustic emissions (SOAE), 127
- Spreading activation models, 456
- SSDR. *See* Species-specific defensive reaction (SSDR)
- Staircase procedure, 109
- Standard random utility models, 676
- Standard recognition test, 482
- Standard social science (SSSM) model, 395
- Start-end model, 437–438
- Stereoscopic depth-constancy problem, 214
- Stevens, S. S., 690
- STG. *See* Superior temporal gyrus (STG)
- Stimulus enhancement, 410
- Stimulus generalization decrement, 363–364
- Stimulus onset asynchrony (SOA), 106, 459
- Stimulus quality, 464
- Stimulus repetition, 305, 464
- Stimulus-response compatibility (SRC)
 - compatibility effects in two dimensions, 302–303
 - conceptual, perceptual, and structural similarity, 302
 - dual-route models, 303–304
 - spatial-compatibility effects, 301–302
 - two-choice tasks, 301
- Stream segregation, 139
- Stroop effect, 11, 552
- Structure from motion (SFM), 217–218
- Subjective expected utility theory, 671
- Subliminal psychodynamic activation, 12
- Summation test, 367
- Superconditioning mechanism, 364
- Superior temporal gyrus (STG), 250
- Synchronization tasks, 333
- Synchrony judgment task, 420
- Syntactic rule theory, 632
- Task dynamic model, 250–251
- Taylor, Franklin V., 691
- Technology-based problem solving, 651
- Teleoperation, 173
- Temporal modulation transfer functions, 135–136
- Temporal synchrony, 22–23
- Test element, 113
- Test of English as a Foreign Language (TOEFL), 454
- Text comprehension and discourse analysis
 - aspects, 583–586
 - brief history, 578–579
 - CAPS, 594
 - CCCI model, 594–595
 - conceptual customization, 599
 - construction-integration model, 593–594
 - DIME model, 595–596
 - documents model, 596
 - educational digital libraries, 599
 - hypertext, 587–588
 - knowledge representation model, 597–598
 - landscape model, 595
 - long-term working memory, 580–582
 - multimedia, 588–590
 - personalized learning, 599
 - psychological process model, 592–593
 - purpose and interest, 591–592
 - schema-based models, 592
 - working memory, 579–580
- Thalamic searchlight hypothesis, 24
- Thalamocortical interactions, 24
- Thalamocortical loop models, 24
- Thematic Apperception Test, 65

762 Subject Index

- Theory of event coding (TEC), 299
Theory of off-sized perceptions, 222
Theory of signal detection (TSD), 135
Thurstone case V preference model, 675
Timbre, 140–141
TMS. *See* Transcranial magnetic stimulation (TMS)
TOAE. *See* Transient evoked otoacoustic emissions (TOAE)
Tolerance, 116
Topic model, 454–455
Touch
 active, multisensory system, 153
 attention, 170–171
 cortex and cortical areas, 155
 cutaneous sensitivity and resolution, 155–156
 cutaneous thresholds, 156–157
 grasping and manipulation, sensory-guided, 157–158
 haptically perceptible properties, 159–161
 haptic memory, 171–172
 haptic pattern perception
 dynamic two-dimensional patterns, 164
 raised two-dimensional outline drawings, 165
 static two-dimensional patterns, 164–165
 three-dimensional solid objects, 165–167
 haptic space perception, 168
 intersensory interactions, 169
 object properties, 161–164
 research applications, 172–173
 skin and receptors, 153–155
Tower of Hanoi problem, 650
Tracking tasks, 334
Train illusion, 227
Training, 509–512
Trait anxiety, 67
Transcranial magnetic stimulation (TMS), 17, 255, 503
Transfer of attention exchange model, 673
Transient evoked otoacoustic emissions (TOAE), 127
Transposed letter effect, 551
Treatise on Physiological Optics, 86
Trial chunk, 401
Two-action test, 410
Two-vowel paradigm, 141

Unconscious priming, 462–463
US-preexposure effect, 362
Utilitarian theory, 87

Vector integration to endpoint (VITE) model, 327
Ventral periaqueductal gray (vPAG), 49
Verbal overshadowing effect, 504
Verbal working memory, 580
Verification model, 458
Visceral self-perception, 25
Visible persistence, 420
Vista space, 220

Visual agnosias, 187–189
Visual codes, 563
Visual imagery, 420
Visual perception
 cortical processing, 184–186
 environmental regularities, 110–111
 foundational questions, 87–95
 higher level visual processing, 186–187
 human performance and natural images statistics, 115–116
 natural contours, co-occurrence statistics of, 112–115
 norms and mechanisms, 116–117
 object recognition
 affordances, 195
 best-fit approach, 194
 best-fit-over-threshold rule, 195
 contextual effects, 205–206
 goal of, 194
 orientation effects, 202
 part-based structural theories, 197–200
 prototypes and categorization, 195–197
 threshold approach, 194
 viewpoint effects, 200–202
 view-specific theories, 202–205
 organization, 189–194
 psychophysical methods
 adaptive methods, 109–110
 constant stimuli, 106–109
 energy and observer thresholds, 104–105
 method of limits, 105–106
 perception vs. being aware, 96
 ROC curve, 104
 signal-detection theory, 102–104
 threshold theory, 96–102
 redundancy and covariation, 111–112
 retina and retinotopic areas, 183–184
 theories of, 85–87
 visual agnosias, 187–189
Visual short-term memory, 420
Visual stimuli, 419
Visuo-motor transformations, 343–345
Visuospatial working memory, 580
vPAG. *See* Ventral periaqueductal gray (vPAG)

Wason selection task, 636
Weber fraction, 136
White noise, 122
Whorfian effect, 624
Win-shift behavior, 406
Word frequency, 464–465
Word identification
 automaticity, word encoding, 552
 component letters, 550–552
 context, 566–568

- feature models, 549
- methods, 548–549
- nonalphabetic languages, word encoding, 553
- template model, 549
- WordNet, 597
- Working memory, 404, 579–580
 - capacity limitations, 428–429
 - cue-driven retention, 432–433
 - decay reconsideration, 428
 - decay vs. interference, 426–427
 - definition, 419
 - episodic buffer, 435
 - forgetting, 425–426
 - hybrid models, 436–438
 - limits of attention, 430–431
 - limits of time, 429–430
 - nonspatial working memory, 283–284
 - overlap in higher brain regions, 282
 - phonological loop, 434
 - retrieval dynamics, 431–432
 - spatial attention, 283
 - temporal distinctiveness, 427–428
 - unitary models, 438–439
 - visual processing regions, 281–282
 - visuo-spatial sketchpad, 434–435

