Absolute judgment pain/dissociation study and, 793–804 auditory, 359-365 waking and, 795-796 span of, 365-368 Analyzers, 208, 210 subitizing and, 365 divided attention and, 212-218 visual, 361-364 focus and, 218-222 Achromatopsia, 63 Andreassi, J., 552 Adaptive Control of Thought (ACT) model, 778–780 Anesthesia Adaptive Resonance Theory (ART), 989, 1008 affective reaction to, 841-842 amnesia and, 1025-1027 brain stem reticular formation and, 866, 874, 876-877 attentional onset and, 1019 ERTAS model and, 923 attention-intention link and, 1012-1014 GABA and, 909 auditory selectivity and, 1010-1011 human studies on, 914-927 fantasy and, 1027-1028 NMDA synapse and, 905-908, 924 generality control and, 1023-1025 processing theory and, 901-912 illusion and, 1009 unified theory for, 918-922 mapping and, 1020-1023 Anomaly detector, 817–818 matching and, 1012-1014, 1018-1019 Anosodiaphoria, 840-841 object recognition and, 1009-1010, 1020-1023 Anosognosia, 826–829 procedural memory and, 1028-1030 caloric stimulation and, 823 recognition code search and, 1021 denial and, 840-841 speech and, 1011-1012, 1014-1016 description of, 805-808 streaming and, 1016-1018 experiments in, 808-818 universality of, 1027 laughter and, 819-820 Vector Associative Map and, 1029 reaction formation and, 813 vigilance control and, 1024-1025 REM sleep and, 820-825 volitional gating and, 1027-1028 tacit knowledge and, 809-818 Afterimages, 347–348 vestibular stimulation and, 823-825 Agnosia, 150-151 Anterior cingulate gyrus, 287 hemisphere deconnection and, 163-164 executive function and, 283-285 multiregional retroactivation and, 1060 idea attendance and, 283 prehension/apprehension and, 177-178 Antrobus, John, 481 Akinetopsia, 63 Anxiety, 611, 839 Alavi, F. N., 1035-1058 Aphasia, 149, 834 Albert, Marilyn S., 593-601 hemisphere deconnection and, 171 Alkire, Michael T., 913-927 multiregional retroactivation and, 1060 Alpert, Nathaniel M., 593–601 Apprehension, 177–178 Alzheimer's disease, 670 Aristotle, 959 Amnesia, 149-150, 721, 822 Arousal. See Binding; Sleep autonoetic consciousness and, 581-583 Artificial intelligence (AI), 1131–1132 cortex and, 1025-1027 Artificial Minds (Franklin), 1150 fringe experience and, 755-756, 784-785 ARTPHONE model, 1014-1016 hippocampus and, 1025–1027 ARTSTREAM model, 1016–1018 ignored words and, 227-234 Arzumanov, Y., 550 multiregional retroactivation and, 1060 Asymmetry, 839. See also Hemispheres, cerebral Amobarbital test, 841–842 amobarbital test and, 841-842 Amytal, 841–842 REM sleep and, 840 Anagrams, 509–510 Asynchrony, 524-529, 533 Analgesia Ataxia, 177-178 hidden reports and, 793-804 Atkinson, Richard C., 373-388

Attention, 224-225, 288-289, 489 neural location and, 291–292 activation of, 309-310 object storage and, 413 alertness and, 287 onset of, 1019 analyzers and, 208, 210, 212-222 orienting and, 280-282 attenuation index and, 273-276 output and, 209-212 automatism and, 19, 279, 631-642 preattention and, 634-637 awareness and, 310-314 (see also Awareness) prefrontal cortex and, 395-407 bias and, 237–239 resource use and, 632-633 binding and, 63–81, 138–140 (see also Binding) response latency and, 217-218 blindsight and, 147-149 reticular formation and, 859-880 blood flow and, 287 scene changes and, 251-261 coherent-ensembles study and, 424-446 selective, 208-213, 298-299 (see also Selective competitive, 80, 1133-1137 attention) Conscious Mattie agent and, 1159-1160 self-representation and, 291, 311-314, 486-488 signal detection in noise, 306-309 context and, 765-766 control and, 279, 303-306, 640 sleep/arousal and, 85-99 convergence zones and, 1074-1075 spatial, 63-81, 161-173, 413, 422-426 cortical columns and, 292-298 speed and, 639 divided, 212-218 stages of, 1019-1020 dorsal stream and, 181-182 stopping and, 28-31 effort and, 639 subjective threshold and, 519-540 enhancement operations in, 298-299 subliminal, 546-551 executive function and, 283-285 supervisory system of, 404, 664 expression and, 292-299, 303-306 suppression and, 298 extrastriate cortex and, 273-277 surface structure and, 243-244 focus and, 7–8, 17, 20–21, 28–31, 63–81, 212–213, synchrony and, 138–140 218 - 222targets and, 216-217 frequency-tagged responses and, 113-123 task classification and, 208-210 fringe experience and, 741-759 (see also Fringe television and, 669 experience) temporal lobe and, 101-111 frontal lobes and, 415-416 thalamus and, 263-272, 302-303, 894 global guidance network and, 1035-1058 theater metaphor and, 1114–1120 Global Workspace model and, 989-992, 1125-1127, triangular circuit and, 299-318 ventral stream and, 181-182 1131-1148 hemisphere deconnection and, 161-173 vision and, 38-39 (see also Vision) idea attendance and, 282-287 willed action and, 655 ignored words and, 227-234 Attenuation index (AI), 273–276 input and, 209-210, 213-217 Auditory system, 1027 intentionality and, 640, 1012-1014 absolute judgement and, 359-365 learning and, 575, 634 (see also Learning) binding and, 130 lesions and, 282 executive function and, 285 lexical meaning and, 239-249 illusion and, 1010-1011 mathematics for, 1045 inner speech and, 493-513 mechanisms for, 279-280 learning and, 663–667 meditation and, 29-31 pitch and, 359-365 metaphors for, 1113-1121 recoding and, 368-370 modality and, 21 REM sleep and, 966 modulation of, 110 selectivity and, 1010-1011 as network, 287-288 speech perception and, 1011-1012, 1014-1016

streaming and, 1016–1018 extrapolation and, 682–683 think-aloud and, 501-504 frequency and, 685-689 thought-sampling and, 481–484 illusory correlation and, 689-691 permutations and, 680-681 TUITs and, 481-482, 484-485 Autocorrelation matrices, 1078 retrieval and, 685 Automatism, 19, 576–577, 631, 642 word frequency and, 679-680 associative context and, 728-733 word pairs and, 689-690 asymmetry of, 839 Avants, S. Kelly, 486 awareness and, 639-640 Averaged evoked potentials (AEPs), 966 bottom-up, 1013, 1015, 1024 Awareness, 153-154. See also Consciousness; capacity and, 632-633 Attention; Perception Conscious Mattie agent and, 1159, 1161-1162 agnosia and, 150-151 control and, 640 amnesia and, 149-150 effort and, 639 anosognosia and, 804-829 fringe experience and, 780-781 aphasia and, 149 hemispheric specialization and, 838-839 automatism and, 631-643 intentionality and, 640 binding and, 125-142 (see also Binding) blindsight and, 147–149 (see also Blindsight) key pressing and, 793-804 brain stem reticular formation and, 885-888 learning rate and, 632–633 disconnected, 147-154, 161-173 memory effects and, 640-641 modifiability of, 637-639 dissociation and, 151–152 (see also Dissociation) parallel processing and, 640 dorsal stream and, 175-184 processing depth and, 634-637 fixedness and, 764-765 referral and, 566-567 fractination and, 151-152 resource use and, 632-633 fringe experience and, 788 (see also Fringe experience) speed and, 639 Global Workspace model and, 989–992, 1125–1127, strategic context influence and, 721-735 1131-1148 talking and, 793-804 guessing and, 702-718 top-down, 1015, 1024, 1027-1028 heightened, 313 Automorphisms, 194–197 lexical meaning and, 241 Autonoetic consciousness organizational hierarchy and, 151-152 adaptive value of, 588 preattention and, 634-637 case study of, 581-583 restricting effects of, 548, 550 development time of, 584 selective, 1139 episodic memory and, 583-585 subjective threshold and, 519-540 experience and, 697-720 thalamus and, 891-900 guessing and, 702–718 triangular circuit and, 310-314 knowledge recovery and, 585-586 ventral stream and, 175-184 measurement of, 584-588 selective dependence of, 584 Baars, Bernard J., 1-10, 311 subjective time and, 583-585 consciousness metaphors and, 1113-1121 variability of, 584 context role and, 761-775 Autoradiography, 93-95 convergence zones and, 1117-1118 Availability Global Workspace model and, 1131-1149, 1154-1162 assessment of, 678-694 Backward masking, 552–553 association and, 677-678 Baddeley, Alan D., 389-393 binomial, 683-685 Balint syndrome, 72 combinations and, 681-682 Basal ganglia, 1138-1139 construction and, 679 Baseline surfaces, 437, 442-446

Blind touch, 148 Basic color terms (BCTs), 190, 192–194 Baxt, N., 337-339, 349 Block, Ned, 7 Beauty, 5 Block, R. A., 687 Behavioral index, 5 Blood flow Bellow, Saul, 479 anesthesia and, 922 Benevento, A., 643, 646 attention and, 287 Bialystok, E., 612-613 hippocampal formation and, 593, 598 Bias, 237-239 imaging and, 470-471 Binding, 1061 learning and, 656-671 animal studies and, 126-127, 131-134 Bogen, Joseph E., 161, 891-900 arousal and, 138-140 Boring, Edwin G., 4 assembly structures and, 126-129 Braille, 231 binocular rivalry and, 125-142 Brain. See also specific structures colliculus and, 138-140 attention and, 203–206 (see also Attention) color and, 63-81, 127 autonoetic consciousness and, 581-588 cortex and, 130 binding and, 63-81, 127 (see also Binding) feature search and, 74-76 blindsight and, 5, 39 cerebral specialization and, 831-850 firing rates and, 127 illusory conjunctions and, 66-70 closed system of, 972 cortical columns and, 292-298 imaging and, 63 implicit conjunction processing and, 76-79 dorsal stream and, 175-184 (see also Dorsal stream) IT area and, 63-64 dreams and, 937-957 (see also Dreams) modelling of, 64 electrical activity and, 43, 285-286, 559-571, 842-846 motor tasks and, 128, 130, 133-134 evoked responses and, 88-91 oscillations and, 137-138 executive function and, 283-285 parietal lesions and, 71–74 external reality and, 971 population coding and, 1087-1090 feline visual processing and, 85-98 spatial attention and, 64-66 frequency-tagged response study and, 113-123 spike density functions and, 127 hemisphere deconnection and, 161–173 idea attendance and, 282-287 synchrony and, 64, 125-142 temporal, 125-146 ignored words and, 227-234 theater metaphor and, 1114-1120 imaging and, 457-468 (see also Imaging, mental) visual search and, 70-71 isomorphism and, 185-200 Binocular rivalry, 41, 57-59. See also Vision learning and, 655–675, 1007–1034 (see also Learning) binding and, 125-142 lexical meaning and, 235-240 divided attention and, 212-218 meditation and, 29-31 frequency-tagged responses and, 113-123 memory and, 321–323 (see also Memory) inputs and, 213-217 multiregional retroactivation and, 1059-1085 oscillations and, 137–138 orienting and, 279-282 phenomenal consciousness and, 134-138 processing limits and, 357-372 temporal lobe and, 101-111 qualia and, 47-48 unconscious processing and, 551-552 reticular activating system and, 853-855 Bistable percepts, 41–43, 48–49 self-representation and, 291, 311–313 Blindsight, 5, 39, 59, 147–149 signal detection in noise, 306–309 fringe experience and, 755 sleep and, 85-99 frontal lobe and, 46 split, 59-60, 149, 474, 824, 835-836, 1119 (see also hemispheres and, 155-159, 163-164 Hemispheres, cerebral) in monkeys, 155-159 stream emergence and, 1123-1129 scene changes and, 251-261 subjective referral and, 978-979

Cartesian Theater, 285 triangular circuit and, 299-314 ventral stream and, 175-184 (see also Ventral stream attention and, 1114-1120 of visual cortex) Global Workspace model and, 1132–1133 waking and, 853-855 Cell assemblies, 268-270, 902-903 zombies and, 36 Chalmers, David, 7 Brain stem reticular formation, 89, 889-890 Change blindness activating system and, 853-855 flicker paradigm and, 252-260 anesthesia and, 866, 874, 876-877 saccadic response and, 251-252 arousal reaction and, 876 scenes and, 251-261 ascending systems of, 883-885 Chapman, J. P., 688 barbiturate sleep and, 876-877 Chapman, L. J., 688 cortical strychnine spikes and, 867-868, 877-878 Chen, L. L., 666 Chessman, Jim, 519-540 cortico-bulbo-reticular path and, 864 dendrites and, 881-883 Cho, Sung-Bae, 1131-1148 Dial bursts and, 875 Claparède, E., 501 EEG activation and, 859-880 Clark, James J., 251-261 encéphale isolé and, 859, 869-872, 877-878 Cocaine, 486-488 ERTAS model and, 923 Codelets, 1150-1152, 1154 event-related potentials (ERPs) and, 865–866, 884 Cognition, 2, 16 evoked pyramidal discharge and, 862, 866-867 affective perspective and, 488-489 lesions and, 876-877 agnosia and, 150-151 medial lemniscus and, 864 alertness and, 287 mesencephalic transection and, 876 amnesia and, 149-150 motor tasks and, 865-868 anesthesia and, 901-912 nature of neurons and, 881-883 anosognosia and, 804-829 recruiting response and, 868-873 aphasia and, 149 assemblies and, 902-903 selective awareness and, 885-888 automatism and, 780-781 sleep and, 859-880, 885, 977-978 thalamus and, 870-878, 886-888, 989 binding and, 125-142 (see also Binding) wakefulness and, 859-880, 885 blindsight and, 5, 39, 46, 59, 147-149, 155-159, 163-Brecht, Michael, 125-146 164, 251–261, 755 Broadbent, Donald E. cerebral specialization and, 831-850 filter theory of, 543, 548, 553 context and, 761-775 fringe experience and, 752 dorsal/ventral streams and, 479-491 implicit learning and, 607 electrical stimulation and, 559-571 selective attention and, 203-204, 207, 247 fringe experience and, 741-759 (see also Fringe Broca's area experience) ignored words and, 231-232 Global Workspace model and, 989–992, 1125–1127, verbal storage and, 409-412 1131-1148 vision and, 46 inner speech and, 455-456 Brodmann's area, 409-412 mental imagery and, 457-468 Brown, R., 755 metaphors for, 1113-1121 Buckner, R. L., 593, 598 modes of, 831-832 multiregional retroactivation and, 1059-1085 Cajal, S., 881-882, 884 NMDA synapse and, 905–908 Caloric stimulation, 823 orienting and, 279-282 Capacity, 1123-1126 origins of, 621-622 Carbon monoxide, 39-40 overlearning and, 643-654

parsing of, 622-624

Carpenter, Gail, 1012

Cognition (cont.)	visual information and, 1162
processing and, 777–780	word retrieval and, 1161
reciprocal inhibition of, 835-836	Consciousness. See also Awareness; Attention;
self-belief discrepancies and, 486-488	Unconscious processing
skill learning and, 655–675	access and, 1116-1117
subliminal, 517, 546–551, 781–784, 888	adaptive functions of, 24–27
triangular circuit and, 299–314	anesthesia and, 901–912, 913–927
verbal reports and, 493–513	assemblies and, 902–903
Cognitive Psychology (Neisser), 16–17	attention and, 203–206 (see also Attention)
Colliculus, 138–140	automatism and, 19, 631-642
Color, 60	autonoetic, 581–588, 697–720
binding and, 63–81, 127	behavioral index and, 4–5
idea attendance and, 282–287	binding and, 63–81, 125–142 (see also Binding)
illusory conjunction and, 66–71	capacity limits of, 27–31
isomorphism and, 185–200	choice and, 23–24
space, 186–194	cognitive skills and, 655–675
Stroop effect and, 283, 285	complexity and, 993–1005
subjective threshold and, 522–536	contents of, 20–27
V1 area and, 44–46	degrees of, 739–740
ventral pathway and, 63	differentiation and, 994, 997
Combinatorial problem, 1087	dreams and, 855–858, 937–957 (see also Dreams)
Competition, 80–81	dynamic core hypothesis and, 999–1002
Complexity, 1003–1005	ERTAS model and, 923
dynamic core hypothesis and, 999–1002	feline visual processing and, 85–99
functional clustering and, 993–994, 996–1002	flow of, 27–28
multiregional retroactivation and, 1070–1071	frequency-tagged responses and, 113–123
neural activation and, 994–996	fringe, 4–7, 741–759 (see also Fringe experience)
reentrant interactions and, 996–997	functional clustering and, 993–994, 996–998
Conjunction, 973–977 binding and, 66–71	global guidance model and, 1035–1058 Global Workspace model and, 1131–1148
illusory, 66–70, 76–79	hemisphere deconnection and, 161–173
implicit processing of, 76–79	historical views of, 1–4, 15–20
Conscious Mattie (software agent)	imaging and, 455–456 (see also Imaging, mental)
ambiguous stimuli and, 1156	inner speech and, 493–430 (see also finaging, mental)
architecture of, 1150–1152	integration and, 993–994, 996–997
attention and, 1159–1160	isomorphism and, 185–200
automatism and, 1159–1160 automatism and, 1159, 1161–1162	learning and, 1007–1034 (see also Learning)
codelets of, 1150–1152, 1154	limitations of, 203
contextual constraints on, 1157	mechanisms for, 17–18, 35–36, 279–289
emotion and, 1150–1151, 1156	meditation and, 29–31
Global Workspace model and, 1149, 1151, 1154–1162	memory and, 321–324, 575–578 (see also Memory)
imaging and, 1157, 1159	mental theory and, 21–23
learning and, 1150–1151, 1162	metaphors for, 1113–1121
masked stimulation and, 1155	neuronal activation and, 994–996
memory and, 1150–1151, 1157–1158, 1161	NMDA synapse and, 905–908
orienting response and, 1160	operational definitions for, 4–5
perception and, 1155–1157, 1161	organizational hierarchy of, 151–152
performance of, 1152–1154	philosophical approach to, 46–48
problem solving and, 1160–1161	processing limits and, 357–372
problem serving and, 1100 1101	processing mines und, 337-372

Conway, M. A., 703-704 qualia and, 47–48, 60, 185–200, 741–759, 901–912 rediscovery of, ix-x Copycat architecture, 150-152 reentrant interactions and, 996-997 Corpus callosum, 59–60, 161, 283 revival of, 15-20 Correlograms, 429 single channel conception of, 550 Cortex, 314, 892. See also Hemispheres, cerebral spinal cord and, 147 amnesia and, 1025-1027 anesthesia and, 913-927 stopping and, 28-31 stream emergence and, 1123-1129 anterior integrative, 1065-1066 subjective threshold and, 7-8, 519-521 anterior temporal, 1062-1063 thalamus and, 891-900 attention and, 288, 292-298, 1019-1020 unifying factors of, 836-837 attenuation index and, 273-276 uses of, 23-24 backwards-in-time referral and, 552-553, 566-568 as variable, 1-10 binding and, 130 verbal reports and, 493-513 binocular rivalry and, 57-59 vision and, 36 (see also Vision) blindsight and, 39, 148 waking and, 853-855 cortical columns and, 292-298, 307-309 zombies and, 36 direct response and, 560, 562 Constructs, 4 dorsal stream and, 175-184, 409-415 Context, 775. See also Fringe experience electrical stimuli and, 559-571 ambiguity and, 766-768 entorhinal, 1067 auditory system and, 762 event-related potentials (ERPs) and, 967-968 conceptual presuppositions and, 771-772 excitable, 559-560 cultural, 773-774 executive function and, 283-284 experience and, 762 extrastriate, 273-277 fixedness and, 762, 764-766 feline visual processing and, 88-91 frames and, 761 frequency-tagged response study and, 113-123 of imagery, 771 functional duality and, 395-397 intentions and, 773 Global Workspace model and, 1134, 1140–1142 meaning of, 761-762 imaging and, 460, 469-477 Necker cube and, 763 IT area and, 58 orientation and, 761-762 learning and, 657-663, 667-671 of perception, 770 MT area and, 41-43, 49-50 presuppositions and, 771-774 multiple domains and, 400-402 priming effects and, 762-764 multiregional retroactivation and, 1062-1065 (see scientific paradigms and, 772-773 also Multiregional retroactivation) selective attention and, 765-766 neuronal adequacy and, 563-566 social, 773-774 NMDA synapse and, 905–908 violations of, 768-769 on-line processing and, 397-399 vision and, 763, 767 orienting and, 279-282 Convergence zones, 1060, 1066, 1069 partitioning of, 395-397 attention and, 1074-1075 perseveration and, 399-400 development of, 1074 posterior cingulate, 669-670 operating principles for, 1073 prefrontal, 395-407 placement of, 1075-1076 processing levels and, 402-404 role of, 1072-1073 resource allocation and, 1137-1141 signal superposition and, 1074 responses without experience, 561-563 structure of, 1072-1073 reticular formation and, 853-855, 859-880 theater metaphor and, 1114-1120 retroactive modulatory effects and, 565

searchlight hypothesis and, 263-264, 266-267

types of, 1073-1074

	D : G 505
Cortex (cont.)	Davis, C., 537
selective attention and, 273–277	Daydreams, 479, 979. See also Dreams
signal detection in noise, 306–309	self-report and, 480–481
single-modality, 1064–1065	thought-sampling and, 481–484
slave systems and, 404	Deaf hearing, 148
sleep and, 88–91, 97, 973 (see also Sleep)	Delayed anti-saccade task (DAS), 400
somatic sensation quality and, 561	Dement, William C.
stream emergence and, 1123-1124	lucid dreaming and, 959-963
subjective referral and, 565–570, 980	REM sleep and, 929-936
supervisory attentional system and, 404	Dendrites
Sylvian-insular, 663–664, 667	arousal and, 881–883
synchrony and, 1094, 1097	competitive attention and, 1133-1137
thalamus and, 263-272, 302-303, 891-900	global guidance model and, 1039-1040, 1045-1046,
theater metaphor and, 1119	1048
triangular circuit and, 299–314	Global Workspace model and, 1131–1148
V1 area and, 43–46	Denial, 840–841, 845–846
ventral stream and, 175-184	Dennett, Daniel, 902
vision and, 41–43, 175–184	Depression, 542, 692
waking and, 853–855	DeSchepper, B., 77
working memory and, 397–400	Desimone, Robert, 273–277
Cowey, Alan, 5, 59, 155–159	Deutsch, J., 544
Craik, F. I. M., 20–21, 732	Dickman, Scott, 541–557
Crawford effect, 552	Differentiation, 994, 997–999
Creativity, 835	Direct cortical responses (DCRs), 560, 562
Crick, Francis, 35–53, 1107, 1115	Disconnection syndrome, 832–833, 1059
binding and, 128–129, 137	Dissociation, 147, 151–152
fringe experience and, 752–753	anosognosia and, 804–829
learning and, 655	hemispheric disconnection syndrome and, 832–833,
metaphors and, 1113	1059
orienting and, 280–282	multiregional retroactivation and, 1059–1085
saliency map and, 1138	pain and, 793–804
thalamic reticular complex and, 263–272	REM sleep and, 812–813, 820–822
Critchley, M., 840–841	Distractors, 291
Cues	binding and, 63–81
autonoetic consciousness and, 581–588	cortical columns and, 294–298
binding and, 63–81	expressional control and, 303–306
exclusion tests and, 723	spatial attention and, 64–66
hippocampal formation and, 593–601	Distributed artificial intelligence (DAI), 1131–
inclusion tests and, 723	1132
post-process observations and, 505–506	Divided attention, 212–218
preconsciousness and, 781–784, 787–789	Dixon, F., 547, 549
prefrontal cortex and, 399–400, 402–404	Dixon, F., 547, 549 Donders, F. C., 659
priming effects and, 762–764	Dopamine-beta-hydroxylase, 882
recall and, 689–690	Dorsal raphe nucleus (DRN) neurons, 950
recollection measurement and, 721–735	Dorsal stream, 1127–1129
Domosio Antonio D. 1050, 1005	animal studies in, 178–181
Damasio, Antonio R., 1059–1085	ARTSTREAM model and, 1016–1018
Damasio, Hannah, ix	attention and, 181–182
Darwin, Charles, 771, 815–817, 824	awareness and, 182

binding and, 63, 71–74 capacity and, 1123-1126 content determinants and, 485-486 electric stimulation and, 565 Global Workspace theory and, 1125-1126 hemispheric specialization and, 837-838 imaginative play and, 484 imaging and, 460 prehension/apprehension and, 177–178 Rorschach inkblots and, 479-480 self-report and, 480-481, 486-488 signal detection and, 481-482, 484-485 thought sampling and, 482-484 triangular circuit and, 301-303 vision and, 175-184 Dorsolateral convexity, 396 Dorsolateral prefrontal cortex spatial storage and, 413-415 verbal storage and, 409–412 Dreams, 553, 855-858, 981-985. See also REM Sleep activation-synthesis hypothesis and, 937–957 anosognosia and, 820-822 auditory system and, 966 awakening threshold and, 968-969 brain state during, 938-939 daydreams, 479-484, 979 defined, 938 electrical activity and, 940-942, 967-968 external reality and, 971-972 eye movements in, 929-936 (see also REM sleep) fantasy and, 1027-1028 forebrain and, 940 hemispheric specialization and, 839-840 intrinsic state and, 969-972 latency criteria and, 946, 948 lucid, 959-963 mapping and, 972-977 motor output and, 940-941 paradoxical sleep and, 965-966 periodicity and, 948 phasic patterns in, 948 pontine brain stem and, 946-950 primary motivating force for, 954 primary process and, 840 psychological implications for, 952-955 reciprocal interaction and, 948, 950 reticular activating system and, 856 sleep cycle model and, 950-952 (see also Sleep) somatosensory system and, 966-967

subjective referral and, 978–979 thalamus and, 970-971, 977-978, 980 trigger zone of, 942-946 vestibular stimulation and, 823-825 visual imagery and, 941-942 volitional communication and, 959-963 Driver, Jon, 227-234 Drugs Amytal, 841-842 Cocaine, 486-488 intoxication, 553 self-belief discrepancies and, 486-488 Du Bois Reymond, E., 901-902 Dulany, D. E., 610, 612, 620 Duncan, J., 80 Duncker, K., 501 Duration, 27-28 Dynamic core hypothesis, 999-1002

Dyslexia, 147

Easton, Paul, 419-451 Ebbinghaus, Hermann, 6, 581 Eccles, John, 46 Edelman, Gerald M. complexity and, 993-1005 frequency-tagged responses and, 113-123 Ehrenstein pattern, 1009 Einstein, Albert, 771–772 Electrical stimulation, 43, 280, 571 backwards-in-time referral and, 566-568 cerebral function effects and, 559-560 cortico-bulbo-reticular path and, 864 delayed response and, 563-565 event-related potentials (ERPs) and, 567 idea attendance and, 285-286 interference effect of, 560 I-TD relationship and, 560-561 medial lemniscus and, 864 neuronal adequacy and, 563-566 pontine brain stem and, 943-944 REM sleep and, 967-968 responses without experience, 561-563 reticular formation and, 859-880 retroactive modulatory effects and, 565 sensory after-charge and, 866 shock treatment and, 842-846 somatic sensation quality and, 561 subjective processing and, 565-570

Electroconvulsive shock treatment (ECT), 842-846

Electronic Inc. (EEC) 59 551 065	tit1 125 126
Electroencephalogram (EEG), 58, 551, 965	non-contingent probes and, 425–426
alpha asymmetry and, 839	parallel processing and, 423–424
anesthesia studies and, 918, 921–922	signal detection in noise, 306–309
cognitive lateralization and, 832	thalamus and, 967–968
dreams and, 938–939	Exclusion tests, 723–724
feline sleep and, 85, 95, 97–98	Executive function, 283–284, 415–416
frequency-tagged responses and, 113, 122	Experience, 22–23
reciprocal inhibition and, 835–836	ACT model and, 778–780
reticular formation and, 853–855, 859–880	autonoetic consciousness and, 581–588
Emotion, 455	dissociation and, 147, 151–152, 793–829, 832–833,
anxiety, 611, 839	1059–1085
apprehension, 177–178	electrical stimulation and, 559–571
Conscious Mattie agent and, 1150–1151, 1156	flow and, 27–28
coping strategies and, 840–842, 845–846	fringe, 741–759 (see also Fringe experience)
denial, 840–841, 845–846	guessing and, 698–718
depression, 542, 692	hidden reports and, 793–804
dorsal/ventral streams and, 479–491	meditation and, 29-31
explicit learning and, 611	response without experience and, 561-563
feelings of imminence and, 743	self referencing, 291
fringe experience and, 741-759 (see also Fringe	subjective threshold and, 519-540
experience)	synchrony and, 1101-1103
guessing and, 702-718	Explicit memory, 37-38, 575-576. See also Memory
hunches, 748, 754–755	hippocampal formation and, 593-601
imminence, 743	processing, 608–611
laughter, 819–820	Extended reticular-thalamic activating system
memory and, 692	(ERTAS), 923, 1139
phobias, 542, 1060	Extrapolation, 682–683
right hemisphere and, 835	Extrastriate cortex, 273–277
rightness and, 744–746, 753–757	
Rorschach inkblots and, 479–480	Fallacy of initiative, 693
scenario construction and, 691–694	Fallon, James H., 913–927
transitive/substantive cycling and, 743-744	Fantasy, 1027–1028
unconscious processing and, 542	Farah, Martha J., 469–477
Engel, Andreas K., 125–146	Faulkner, William, 479
Epilepsy, 1061	Feeling of knowing, 754–755
hemisphere deconnection and, 161–173	Ferenczi, S., 838–839
Episodic memory, 580, 583–585, 785, 788. <i>See also</i>	Filter theory, 543–544, 553
Memory	Fisher, C., 548–549
Ericsson, K. Anders, 493–513	Fixedness, 762, 764–766
Error detection, 577	Flicker sequences, 252–260
ERTAS model, 923, 1139	Flip-flops, 1042
Event-related potentials (ERPs)	Flohr, Hans, 901–912
baseline surfaces and, 437, 442–446	Flow, 27
brain stem reticular formation and, 865–866, 884	meditation and, 29–31
coherent-ensembles study and, 419–420, 424–446	stopping and, 28–31
cortex and, 967–968	Focal attention, 7–8, 17, 20–21, 218. See also
electrical stimulation and, 567	Consciousness; Awareness; Attention
imaging and, 469–470	analyzers and, 220–222
memory and, 324	binding and, 63–81

division and, 212–213 attention and, 415–416 executive processes and, 283-285, 415-416 one input and, 219-220 stopping and, 28–31 imaging of, 409-414 targets and, 222 inhibition and, 415-416 Forster, K. I., 537 learning and, 665 Fourier transform algorithms, 114 multiregional retroactivation and, 1063-1064 Fractionation, 151–152 object storage and, 413-415 Franklin, Stan, 1149-1164 verbal storage and, 409–412 Free recall, 376-383 vision and, 46, 48–49 French, 612-613 Fulton, John, 395 Frequency judgements. See Availability Functional clustering, 993-994, 996-998 Frequency-tagged response, 121-123 dynamic core hypothesis and, 999-1002 methodology for, 113-115 Functionalism, 614 results of, 115-120 Functional magnetic resonance imaging (fMRI), 49-50 Freud, Sigmund, 15, 554, 825, 831 attentional expression and, 292-296 dreams and, 937 binding and, 63 laughter and, 819 BOLD signal, 667-668 reaction formation and, 813 dual-task performance and, 416 topographical model of, 833–834 frequency-tagged responses and, 113 frontal lobes and, 409-414 Fries, Pascal, 125-146 Fringe experience, 4–7, 758–759, 790–791 ignored words and, 227-234 ACT model and, 778-780 learning and, 667-669 amnesia and, 755-756 orienting and, 280 anosognosia and, 804-829 automatism and, 780-781 GABA (gamma amino butyric acid), 49, 909 anesthesia and, 921 blindsight and, 755 cerebral specialization and, 831-850 electrical stimulation and, 562 connectionism and, 756-757 neurons, 265-266, 975 context and, 746-748, 761-775 NRT and, 1036 Crick on, 752-753 Gage, Phineas, ix description of, 741-742 Galin, David, 831–850 feeling of knowing and, 754–755 Gamma oscillations, 46, 137–138 feelings of imminence and, 743 Gardiner, John M., 697-720 functional explanation for, 746, 748-750 Garner, W. R., 360-361 hypnotic alterations and, 785-787 Gaussian interaction, 1047-1048, 1050 implicit memory and, 784-785 Gazzaniga, M. S., 311, 579, 1119 ineffability and, 747–748 anosgnosia and, 824 William James' phenomenology of, 742–751 hemisphere deconnection and, 162, 171–172 pain/dissociation in analgesia, 793-804 Geometry, 1087 preconsciousness and, 787-789 Gerbrands tachistoscope, 326 processing perspective and, 777-780 Gestalt criteria, 130 rightness and, 744-746, 753-757 Global Field Power, 426, 429 subliminal perception and, 781-784 Global guidance model, 1057-1058 tip-of-the-tongue phenomenon and, 742, 745, 748, analysis of, 1040-1045 754-755 computer simulation and, 1045-1053 transitive/substantive cycling and, 743-744 control and, 1042-1043, 1052, 1054-1056 Frith, Christopher D., 227–234 Laplacian net and, 1044-1045 local control and, 1042 Frontal eye field, 666 Frontal lobes, 417-418 NRT and, 1035-1040, 1052-1056

Global guidance model (cont.) deconnection of, 161–173 denial and, 840-841 short-term memory and, 1056 softer gating and, 1041-1042 disconnection syndrome and, 832-833 stability and, 1044-1045 dissociation and, 833-835 triadic synapse and, 1043-1044 dreams and, 839-840 Global Workspace model, 989–992, 1147–1149 electrical stimulation and, 842-846 hemianesthesia and, 838-839 competitive attention and, 1133-1137 imaging and, 462-466, 472-475 Conscious Mattie agent and, 1149, 1151, 1154–1162 control and, 1136-1137 integration of, 835-836 cortex and, 1134, 1140-1142 laughter and, 819-820 distributed artificial intelligence and, 1131-1132 orienting and, 281-282 ERTAS model and, 1139 primary process and, 834 gating and, 1141-1146 reciprocal inhibition of, 835-836 HEARSAY model and, 1131 REM sleep and, 820-825 homunculus and, 1132-1133 resolution by motivation and, 836 memory and, 1134, 1140 separate stream development and, 837-838 resource allocation and, 1133, 1137-1141 somatic expression and, 838-839 stream emergence and, 1125-1127 structural theory and, 834 thalamus and, 1134, 1140-1141 temporal correlation and, 1095 theater of consciousness and, 1132-1133 topographical model of, 833-834 Goffman, Ervin, 773 unity factors for, 836-837 Goldman-Rakic, P. S., 395-407 Higgins, Tory, 486 Golgi studies, 881-882, 886 Higher vocal center (HVC), 666 Goodale, Melvyn A., 175-184 Hilgard, Ernest R., 793-804 Graesser, Art, 1149-1164 Hintzman, D. L., 687 Grammar, 575, 604 Hippocampus implicit learning and, 615-620 amnesia and, 1025-1027 binding and, 130 Gray, Charles M., 1087-1111 Gregg, V. H., 706-707 conscious recollection and, 593-601 Groeger, J. A., 537-538 lexical meaning and, 247–248 Grossberg, Stephen, 1007–1034 multiregional retroactivation and, 1060 (see also Guessing, 698-701 Multiregional retroactivation) logic and, 705 object recognition and, 1010 recent encounters and, 702-704 synchrony and, 1097, 1099 recollection measurement and, 721-735 Hobson, J. Allan, 937–957 study transcript on, 708-718 Homunculus, 1132–1133 theory on, 704-707 Horseradish peroxidase, 882 Hubel, David H., 85-99 Haier, Richard J., 913-927 Humor, 819-820 Hake, H. W., 360-361 Hypercomplex response, 89 Halliday, A. M., 843-844 Hypnotism, 785–787 Hallucinations, 38, 979 pain/dissociation study and, 793-804 Hebbian theory, 989 Hysterical stigmata, 838–839 Hemispheres, cerebral, 891–892 amobarbital test and, 841-842 Iconic (short-term) memory. See Memory anosognosia and, 804-829 Idea attendance, 282-286 automatism and, 838-839 Illusions, 689-691

auditory, 1010-1011

brightness and, 1009

blindsight and, 155-159

cognitive specialization and, 831-850

cerebral specialization and, 817, 824 visual cortex and, 469–472 conjunctions, 66-70, 76-79 visuo-spatial sketchpad and, 390-393 contours and, 1009 Imaging, brain Ehrenstein pattern, 1009 alpha asymmetry and, 839 implicit processing of, 76-79 anesthesia and, 913-927 Imagination autoradiography and, 93-95 BOLD, 233n11 children's play and, 484 fallacy of initiative and, 693 cognitive lateralization and, 832 fantasy and, 1027-1028 dreams and, 938-939 process inventory for, 480-481 EEG, 58 (see also Electroencephalogram (EEG)) Rorschach inkblots and, 479-480 fMRI, 49-50 (see also Functional magnetic resonance Imaging, mental, 85-86, 206, 467-468 imaging (fMRI)) afterimages and, 347-348 frequency-tagged responses and, 113-123 attentional expression and, 292-296 hippocampal formation and, 593-601 binding and, 63 learning and, 656-663, 665, 667-669 binocular rivalry and, 101-111 MEG, 58, 113-114, 121-122, 292-296 blood flow and, 470-471 PET, 49 (see also Positron emission tomography coherent-ensembles study and, 424-446 Conscious Mattie agent and, 1157, 1159 reciprocal inhibition and, 835-836 context and, 771 REM sleep and, 929-936 deficits in, 462-464 reticular formation and, 853-855, 859-880 dorsal/ventral stream and, 479-491 Imber, Lois G., 643-654 dreams and, 938, 941-942 (see also Dreams) Immediate memory. See also Memory dual-task performance and, 416 absolute judgement and, 359-368 emotion and, 303-304, 455 brief visual perception studies and, 326-353 capacity limits of, 357-372 executive function and, 283-284 fringe experience and, 741-759 (see also Fringe control of short-term, 373-388 exposure duration and, 330-331 experience) frontal lobes and, 409-414 observing strategies and, 332-335 functional architecture for, 475-476 order of report and, 341-345, 349-350 generation of, 457-464 repeatability and, 350-351 hemispheric specialization in, 464–466, 472–475 sensory, 321-322 idea attendance and, 285-286 span of, 365-368 ignored words and, 227-234 working, 322-324 memory and, 324, 373-374 (see also Memory) Implicit learning, 626–630 neural basis for, 469-477 abstraction and, 623-624 neuropsychological testing and, 461-462 defined, 603 orienting and, 280-282 explicit processes and, 608-611 phonological loop and, 389-390 fringe experience and, 784-785 retinal stabilization and, 551 functionalism and, 614 Rorschach inkblots and, 479-480 grammar and, 604, 615-620 intuition and, 625 self-consciousness and, 1056 signal detection and, 484-485 mental representation and, 614-620 split brain and, 474 probability learning and, 605-606, 608, 619 synchrony and, 140 rank-order correlations in, 613-614 theater metaphor and, 1118 representational realism and, 615 thought-sampling and, 481-484 research in, 603-621 TUITs and, 481-482, 484-485 robustness of, 624-625 V1 area and, 44-46 specific information and, 611-613

Implicit learning (cont.) specific, 611-613 structure and, 606-608, 613-614 synchrony and, 138-140 tacit knowledge and, 620-621, 809-818 tacit knowledge and, 620-621, 809-818 unconscious processing and, 621-624 theater metaphor and, 1114-1120 Inclusion tests, 723-724 transfer of, 383, 386-388 Induced change blindness, 251, 261 variance and, 357-358 flicker sequences and, 252-260 verbal reports and, 493-513 test results, 257–260 Ingvar, David, 583 Ineffability, 747–748 Inhibition, 415-416 Inferior olive, 972 Inner speech, 455-456 Inferior temporal (IT) area, 58 dorsal/ventral streams and, 479-491 attenuation index and, 273-276 self-belief discrepancies and, 486–488 binding and, 63-64 self-report and, 480-481 cortical columns and, 292-298 theater metaphor and, 1118 perceptual organization study and, 101-111 verbal reports and, 493-513 triangular circuit and, 299 Inputs, 213-217. See also Memory Information absolute judgement and, 359-368 abstraction and, 623-624 attended, 241-243 ACT model and, 778-780 basal ganglia and, 1138–1139 afterimages and, 347-348 focus and, 219-220 anesthesia and, 901-912 global guidance model and, 1035-1045 anomaly detector and, 817-818 lexical meaning and, 241-243 baseline surfaces and, 437, 442-446 neural modeling and, 1037-1038 binding and, 125–142 (see also Binding) population coding and, 1087-1090 recoding and, 368-370 brief visual perception and, 326-353 connection-information distribution and, 1142-1143 theater metaphor and, 1118–1119 Conscious Mattie agent and, 1149-1164 triangular circuit and, 299-314 context and, 761-775 unattended, 235-260 cortex and, 395-407 Instant asymptote technique, 605–606 decay of, 332-337 Integration, 993–994, 996–998 explicit representation and, 37-38 cortex and, 1065-1066 fringe experience and, 777–780 dynamic core hypothesis and, 999-1002 generality control and, 1023-1025 temporal correlation hypothesis and, 1090-1107 Intention, 640, 773, 1012-1014, 1028 guessing and, 698-718 hidden reports and, 793-804 Intercolumnar interactions, 1093–1095 imaging and, 457-477 Interrogation, 22 implicit learning and, 603–630 (see also Implicit Intoxication, 553 learning) Intracolumnar interactions, 1090-1093 intuition and, 625 Introspectionism, 8–9 isomorphism and, 185-200 Intuition, 625 mental lexicon and, 778 Isenhart, Robert, 419-451 NMDA synapse and, 905–908 Isomorphism, 185 biological approach to, 197-200 order of report and, 341–345 overlearning and, 643–654 color spaces and, 186-194 overload, 348-349 constraint of, 194-197 pain and, 798–799 probability learning and, 605-606, 619 Jacoby, Larry L., 6, 705, 721-735 processing levels and, 402-404 James, William, 1, 4, 6, 16, 57, 479

attention and, 279, 291

short-term store and, 373-388

complexity and, 993 Laplacian net structure, 1040, 1042, 1044–1045 fringe experience and, 742-751 Lappin, J. S., 215–216 learning and, 655, 671 Latency, 217-218 short-term memory and, 373 Lateral geniculate body (LGB), 85, 87-88, 98 stream approach and, 993 autoradiography of, 93-95 unconscious processing and, 541, 554 dorsal stream and, 175-176 ventral stream and, 175-176 Jasper, Herbert, 891 Laterodorsal tegmental neurons, 977-978 Jennings, J. M., 732 John, E. Roy, 58, 419-451 Laughter, 819–820 Jonides, John, 409-418 Laurentian Symposium, 881 Joyce, James, 479 Learning, 575-576, 1031-1034 Judgement. See also Availability amnesia and, 1025-1027 auditory, 359-365 arousal and, 655 span of, 365-368 ART and, 1008-1030 (see also Adaptive Resonance subitizing and, 365 Theory (ART)) visual, 361-364 attentional onset and, 1019 attention-intention link and, 1012-1014 Kahneman, Daniel, 677-695 auditory system and, 1010-1011, 1016-1018 automatism and, 634 Kates, R. W., 693 baseline measurements and, 668-669 Keats, John, 881 Keele, S. W., 614 blood flow and, 656-671 Kelley, C. M., 6 cognitive skills and, 655-675 Kihlstrom, John F., 777-791 Conscious Mattie agent and, 1150-1151, 1162 Kintch, Walter, 754 content and, 655 Klein, G. A., 548 control state and, 659 Kleitman, Nathaniel, 929-936 cortex and, 667-671, 1025-1027 Klinger, E., 482, 483 decreased activity regions and, 667-671 Knowledge. See Information fantasy and, 1027-1028 Koch, Christof, 35-36, 47-53, 1107 generality control and, 1023-1025 hippocampus and, 1025-1027 binding and, 128–129, 137 bistable percepts and, 41–43 illusion perception and, 1009 fringe experience and, 752-753 imaging of, 656-663 Global Workspace model and, 1144 implicit, 626 (see also Implicit learning) learning and, 655 increased activity regions and, 663-667 saliency map and, 1138 memory and, 1007 (see also Memory) V1 hypothesis and, 43–46 multiregional retroactivation and, 1076-1079 visual representation and, 37–41 object recognition and, 1009–1010, 1020–1023 König, Peter, 125–146 overlearning and, 643-654 Korsakoff's syndrome, 784. See also Amnesia planned movement and, 1027-1028 Kosslyn, S. M., 457-468 procedural unconsciousness and, 1028-1030 Kostandov, E., 550 rate, 634 Kuhn, Thomas, 772-773 speech perception and, 1011-1012, 1014-1016 Kulczycki, Alex, 77 stability-plasticity dilemma and, 1008 Külpe, O., 364–365 systems level, 1077–1078 vigilance control and, 1024-1025 LaBerge, David, 19, 138-139, 291-318 volitional gating and, 1027-1028 LaBerge, Stephen P., 959-963 Lesions, 5, 892 Langer, Ellen J., 643-654 agnosia and, 150-151 amnesia and, 149-150, 784-785 (see also Amnesia) Language. See Lexical studies

Lesions (cont.)	unattended inputs and, 235–240
anosognosia and, 804–829	underlying structure and, 244–248
aphasia and, 149	verbal storage and, 409–412
attention and, 138–140	word frequency and, 679-680
autonoetic consciousness and, 581-588	word pairs, 689–690
binding and, 71–74	Libet, B., 559–571
blindsight and, 39, 147–149	Lichtheim, L., 663–665
denial and, 840–841	Liminal intensity, 560–561
dynamic core hypothesis and, 999-1002	Livingstone, Margaret S., 85–99
frontal lobe and, 46	Llinás, Rodolfo, 965–985
hemispherical, 161–173, 831–832, 834	Lloyd, B. B., 614-615
hippocampal system and, 1010	Locke, John, 59, 185-186, 193-194
learning and, 665, 670	Lockhart, R. S., 20-21
mesencephalic transection, 876	Logothetis, N. K., 101–111
multiregional retroactivation and, 1060, 1062–1065	Long-term memory, 374. See also Memory
orbital, 395–396	ART model and, 1020–1023
orienting and, 282	speech perception and, 1011–1012
parietal lobe syndrome and, 805–829	verbal reports and, 493–494
prehension/apprehension and, 177–178	Long-term potentiation (LTP), 1078
synchrony and, 138–140	Zong term potentiation (Z11), 1070
vision and, 59–60	McCarley, Robert W., 937–957
working memory and, 397–399	Macdonald, Hugh, 793–804
Levy, J., 832	MacKay, Donald B., 235–250
Lewicki, P., 607–608	McNeill, D., 755
Lewis, S., 620	Magnetoencephalogram (MEG), 58
Lexical studies. See also Implicit learning	attentional expression and, 292–296
anagrams, 509–510	frequency-tagged responses and, 113–114, 121–122
anosognosia and, 824	Magnocellular layer, 175–176
attended inputs and, 241–243	Magoun, H. W., 859–880
* '	o , ,
attentional expression and, 294–298	Malsburg synapses, 267–270
awareness and, 241	Mandler, George, 13, 15–33
bias and, 237–239	Mangan, Bruce, 741–759
brief visual perceptions and, 326–353	Mapping
context and, 761–775	entity-centered knowledge and, 1077
English vocabulary and, 1117	object recognition and, 1020–1023
grammar and, 575, 604	resource allocation and, 1137–1141
guessing and, 698–718	saliency and, 1138
hemispheric disconnection syndrome and, 32–38	spatial, 972–977
higher vocal center and, 666	statistical parametric, 233n18, 913–927
hippocampal formation and, 593–601	Marcel, A. J., 537–538, 755
imaging and, 457–468	Margolin, Arthur, 486
learning and, 575	Mathews, R. C., 620
multiregional retroactivation and, 1078-1079	MATLAB, 114
nonsense syllables and, 370–371	Matrices, 429, 1078
observing strategies and, 332–335	Meaning, 48, 50
order of report and, 341–345, 349–350	Medial lemniscus, 562, 565, 864–865
recollection measurement and, 721–735	Medial superior temporal (MST) area, 180
skill learning and, 656–663	Mediodorsal thalamus, 1043
surface structure and, 243–244	Meditation, 29–31

Memory, 6, 419, 447–451, 590–591, 989–990 illusory correlation and, 689-691 absolute judgement and, 359-368 imaging and, 373-374, 457 (see also Imaging, mental) afterimages and, 347-348 immediate, 321–324 (see also Immediate memory) agnosia and, 150-151 implicit, 76-79, 603-630, 784-785 amnesia and, 149-150 (see also Amnesia) inclusion tests and, 723-724 anatomical dispersion of, 420-424 information overload and, 348-349 anosognosia and, 805-829 interference in, 383, 386-388 ART model and, 1020-1023 know response and, 697-720 association and, 677–678, 728–733 Korsakoff's syndrome and, 784 automatism and, 576-577, 631-643, 721-735 learning and, 575-576, 1007 (see also Learning) autonoetic consciousness and, 581-589 lesions and, 397–399 availability and, 677-695 lexical meaning and, 235-249 baseline surface and, 437, 442-446 literature on, 579 bias and, 237-239 long-term, 374, 493-494, 1011-1012, 1020-1023 binding and, 63-81, 125-146 (see also Binding) mechanisms for, 20-21 blankness and, 581-583 modulation and, 442-446 brief visual perceptions and, 325-356 multiple domains and, 400-402 capacity limits of, 357-372 multiregional retroactivation, 1059-1085 CID and, 1142-1143 object storage and, 413-415 coherent-ensembles study and, 424-446 observing strategies and, 332-335, 504-509 Conscious Mattie agent and, 1150-1151, 1157-1158, operational, 20-21 1161 order of report and, 341-345, 349-350 control of short-term, 373-388 overlearning and, 643-654 corticohippocampal interactions and, 1025-1027 parallel processing and, 423-424 disconnected awareness and, 147-154 parsing and, 622-624 dreams and, 931-932, 959-963 (see also Dreams) performance, 585-586 echoic, 321 perseveration and, 399-400 phonological loop and, 389-390 electrical stimulation and, 842-845 environmental support effects and, 732-733 prefrontal cortex and, 395-407 episodic, 580, 583-585, 785, 788 priming effect and, 593 exclusion tests and, 723-724 procedural, 580-581, 1028-1030 executive function and, 284 processing levels and, 402-404, 1077 experience and, 697-720 rate of loss, 382 explicit/implicit, 37-38, 575-576, 593-601, 608-611 recollection measurement and, 721-735 exposure duration and, 330-331 rehearsal and, 373, 384-385 fallacy of initiative and, 693 REM sleep and, 820-822, 931-932 famous personalities test and, 685-689 repeatability and, 350-351 filter theory and, 543 repressed, 813-815 flicker sequences and, 252-260 retrieval and, 577-578, 585-586 free recall and, 376-383 scenario construction and, 691-694 frontal lobes and, 409-418 semantic, 580-581, 585 functional landscapes for, 426–435 sensory, 321-322 global guidance model and, 1056 short-term, 20-21, 373-388 (see also Short-term Global Workspace model and, 1134, 1140 memory) guessing and, 698–718 slave systems and, 404 hallucinations, 38 Spatial Principal Components and, 427–430, 433, hippocampal formation and, 593-601, 1025-1027 435-441 spatial sketchpad and, 390-393, 397, 404 iconic, 16-17, 258-259 spatio-temporal coherence and, 422-424 ignored words and, 227-234

Memory (cont.) Cartesian theater, 285, 1114–1120, 1132–1133 speech perception and, 1011-1012 coherent-ensembles study and, 424-446 strategic context influences and, 721-735 disc player metaphor, 304-306 stream emergence and, 1123-1129 distributed artificial intelligence, 1131-1132 subitizing and, 365 divided attention and, 212-218 subliminal perception and, 548 dreams and, 950-953 supervisory attentional system and, 404 ERTAS, 923, 1139 surface structure and, 243-244 filter theory, 543 systems level, 1077-1078 Freud's topographical, 833-834 Temporal Principal Component and, 430, 441-442 gating, 1041-1042, 1141-1146 theater metaphor and, 1114-1120 global guidance, 1035-1058 tip-of-the-tongue phenomenon and, 742, 745, 748, Global Workspace, 989-992, 1125-1127, 1131-754-755 tracer stimuli and, 425 HEARSAY, 1131 isomorphism and, 185-200 unconscious processing and, 543, 545-546 (see also Unconscious processing) local control, 1042 varieties of, 580-581 memory performance, 585-586 Varimax Analysis and, 430, 435-442 mental parsing, 622-624 verbal subsystems of, 389–393, 409–412, 493–494 metaphoric, 1113-1121 vision and, 38–39, 61, 321–322 (see also Vision) neural, 989, 1037-1038 white noise and, 383, 386-388 orienting and, 279-282 working, 322-324 (see also Working memory) perception, 207-208 zero recollection and, 722-725 positive set and, 546 Mental theory, 21–24 Programmable Blackboard, 1142 Merikle, Philip M., 519-540 resource allocation, 1137-1141 Mesencephalic reticular formation, 89 searchlight hypothesis and, 263–264, 266–267 Meta-Pi connection, 1144-1145 selection, 207-212, 222-225 Meumann, Ernst, 373 sleep cycle oscillation, 950-952 Middle temporal (MT) area, 41, 43, 49-50 software agent, 1149-1164 subliminal perception, 546-551 dorsal stream and, 175-176, 180 frequency-tagged responses and, 122 supervisory attention, 664 phenomenal consciousness and, 135 temporal correlation hypothesis, 1090–1107 ventral stream and, 175-176, 180 unconscious processing, 543-546 Mill, James, 373 Vector Associative Map, 1029 Mill, John Stuart, 373 verbal reports and, 493-513 Miller, George, 15-16, 20, 604 wagon wheel, 1139, 1141-1146 fringe experience and, 750, 752 winner-take-all, 1035, 1134, 1136-1137 processing limits and, 357–372 Wundt's, 235, 247 Millward, R. B., 607–610 Modulation, 437, 442–446 Milner, A. David, 175-184 Mongrel concept, 310 Miosis, 967 Moran, Jeffrey, 273-277 Mishkin, M., 175, 177 Morgan, Arlene H., 793-804 Mnemonic response, 402-404 Moruzzi, G., 859-880 Models, 388 Motion, 63–66 Motor tasks, 60, 784-785 ACT, 778-780 anosognosia and, 804-829 Adaptive Resonance Theory, 989, 1008–1030 analytic, 1038-1040 binding and, 128, 130, 133-134 (see also Binding) ARTPHONE, 1014-1016 blood flow regions and, 657-663 ARTSTREAM, 1016-1018 brain stem reticular formation and, 865-868 binding, 63–81, 125–132 (see also Binding) dreams and, 940-941

event-related potentials (ERPs) and, 967–968 oscillation of, 419 hemisphere deconnection and, 161-173 prefrontal cortex and, 402-404 increased regional activity and, 663-667 winner-take-all, 1035 multiregional retroactivation and, 1060 Neural correlate of consciousness (NCC), 35, 48 prefrontal cortex and, 395, 399 bistable percepts and, 41-43 processing levels and, 402-404 fMRI and, 49-50 skill learning and, 655-671 frontal lobe hypothesis, 46 Multiregional retroactivation, 1082-1085 multilevel representation and, 37-38 attention and, 1074-1075 V1 hypothesis and, 43-46 binding and, 1061 beginning of, 1 channel separation and, 1066 Neurons. See also Brain; Networks complexity and, 1070-1071 activation/deactivation of, 994-996 adequacy delay and, 563-565 constraints of, 1069-1070 convergence zones and, 1066, 1069, 1072-1076 analytic model and, 1038-1040 cortex damage and, 1062-1065 attentional expression and, 292-298 description of, 1059-1060 binding and, 63–81, 125–132 (see also Binding) domain formation and, 1070-1071 brain stem reticular formation and, 881-883 framework for, 1069, 1076-1079 cell assemblies and, 268-270, 902-903 frontal lobe damage and, 1063-1064 competitive attention and, 1133-1137 functional regionalization and, 1071 computer simulation of, 1045-1053 hippocampus and, 1067 cortical column and, 292-298 integration and, 1067-1068 delayed response and, 400-401 learning and, 1076-1078 differentiation and, 994, 997-999 lesions and, 1060, 1062-1065 dorsal raphe nucleus, 950 dynamic core hypothesis and, 999-1002 memory and, 1076-1078 proposals for, 1079-1081 electrical stimulation and, 559-571, 842-846 representation nature and, 1071–1072 executive function and, 283-285 signal superposition and, 1074 feedback loops and, 989-990 temporo-spatial solution and, 1061-1062 FEF and, 666 Mutism, 164 feline visual processing and, 85-99 firing rate and, 127, 138, 267-270, 1090, 1095 (see Nagel, Lynn E., 959-963 also Synchrony) Nagel, Thomas, 7 functional clustering and, 993-994, 996-999 Narcosis. See Anesthesia GABAergic, 265-266, 975 Natsoulas, T., 16 global guidance model and, 1035-1058 Necker cube, 41-43, 763 Global Workspace model and, 989–992, 1125–1127, Neisser, U., 15-17, 31n 1131-1148 anosognosia and, 824 harmonic singing of, 58-59 fringe experience and, 752, 824 idea attendance and, 282-287 psychological unconscious and, 544, 546, 553 imaging and, 469-477 (see also Imaging, mental) Neopallium, 396 integration and, 993-994, 996-999 Networks intercolumnar interactions and, 1090-1095 intralaminar nuclei of thalamus and, 891-900 anatomical memory dispersion and, 420-424 coherent-ensembles study and, 424-446 labeling of, 895-896 competitive attention and, 1133-1137 latency criteria and, 946, 948 global guidance, 1035-1058 laterodorsal tegmental, 977-978 Global Workspace model and, 989-992, 1125-1127, leaky integrator, 1039 1131-1148 learning and, 657–663 (see also Learning) Laplacian, 1040, 1042, 1044-1045 Malsburg synapses and, 267-270

multiregional retroactivation and, 1059-1085

Meta-Pi connections and, 1144-1145

Neurons (cont.) softer gating model and, 1041–1042 net models, 989, 1037-1038 stability and, 1044-1045 NMDA synapse and, 905–908 Theory of Mind and, 1054–1055 on-line processing and, 397-399 triadic synapse and, 1043-1044 orienting and, 279-282 oscillation of, 419 Oculomotor delayed-response (ODR), 400 overlearning and, 643-654 Odor, 130 periodicity in, 948 Olivocerebellar system, 972–973 phasic patterns in, 948 On-line system, 39-40 phenomenal consciousness and, 134-138 Order of report, 341-345, 349-350 population coding and, 1087-1090 O'Regan, J. Kevin, 251-261 prefrontal cortex and, 395-407 Orienting, 279 reciprocal interaction in, 948, 950 Conscious Mattie agent and, 1160 reentrant interactions and, 996-997 lesions and, 282 resource allocation and, 1137-1141 visual, 280-282 reticular complex and, 264-266, 853-855 Ornstein, R. E., 27-30 Oscillation, 137-138, 419, 1103-1106. See also SEF and, 666 sleep and, 85-99, 946-950 Synchrony split brain and, 59–60 Outputs, 210–212, 229 stream emergence and, 1123-1129 Overlearning subjective timing and, 565-566 experiments in, 643-654 temporal correlation hypothesis and, 1090-1107 label effects and, 644-653 thalamus and, 263-272 mindlessness and, 643 nonsalient condition and, 648-649 theater metaphor and, 1114-1120 salient condition and, 648 triadic synapse and, 1043-1044 triangular circuit and, 299-314 study analysis, 651–653 Newman, James, 1131–1148 Newton, Isaac, 772 PABLO, 1143 NMDA-gated calcium channel, 1078 Pain dissociation and, 793-804 NMDA synapse anesthesia and, 905-908 hidden experience of, 796–798 description of, 903-905 information from, 798-799 Global Workspace model and, 1145 suffering and, 799-800 n-order intentional system, 902 Palmer, Stephen E., 185–200 Norman, D. A., 664-665 Papez circuit, 1043 Nucleus reticularis thalami (NRT) Paré, Denis, 965-985 analysis and, 1038–1045, 1052, 1054–1056 Parietal lobe computer simulation of, 1045–1053 anosognosia experiments and, 808-819 Conscious I and, 1054–1055 attentional expression and, 293-294 control and, 1042-1043 binding and, 71–74 description of, 1035-1036 caloric stimulation and, 823 GABA transmission and, 1036 damage to, 805-808 global guidance model and, 1035-1040, 1052laughter and, 819-820 reaction formation and, 813 inhibitory feedback and, 1037 REM sleep and, 820-825 Laplacian net and, 1044-1045 tacit knowledge and, 809-818 lateral geniculate nucleus and, 1036 vestibular stimulation and, 823-825 neural modeling and, 1037-1038 Parvocellular layer, 175–176 perigeniculate nucleus and, 1036 Pavlov, I. P., 1

Pearson product moment, 429 meaning and, 48 Penfield, Wilder, 891-893 mentalism and, 24 Perception. See also Attention qualia problem and, 47-48 absolute judgment and, 359-368 zombies and, 36 ACT model and, 778-780 Phobias, 542, 1060 anosognosia and, 804-829 Piaget, Jean, 484, 1028 Picture delayed-response (PDR), 401 attenuation index and, 273-276 awareness, 147-152 (see also Awareness) Pollack, I., 359-364, 367 backward masking and, 552-553 Pontine brain stem binding and, 63-81, 125-132 (see also Binding) dream trigger zones and, 942-946 Conscious Mattie agent and, 1155-1157, 1161 electrical stimulation and, 943-944 context and, 761-775 sleep cycle activity in, 946-950 dorsal stream and, 181-182 Population coding, 1087–1090 feline visual, 85-99 Positive set, 546 Positron emission tomography (PET), 49 fixedness and, 764-765 flicker sequences and, 252-260 anesthesia studies and, 913-927 frequency-tagged responses and, 113-123 attentional expression and, 292-296 general model of, 207-208 binding and, 63 hemisphere deconnection and, 161-173 executive function and, 284 ignored words and, 227-234 expressional control and, 303-304 illusions and, 1009 (see also Illusions) frontal lobes and, 409-414 isomorphism and, 185-200 hippocampal formation and, 593-601 multiregional retroactivation and, 1059-1085 idea attendance and, 283, 285-286 observing strategies and, 332-335 learning and, 656-663, 665, 667-669 order of report and, 341-345, 349-350 orienting and, 280-281 organization of, 101–111 phonological loop and, 389–390 pain and dissociation, 793-804 visuo-spatial sketchpad and, 391, 393 population coding and, 1087-1090 Posner, Michael I., 18-21, 614 prehension/apprehension and, 177-178 consciousness mechanisms and, 279-289 scene changes and, 251-261 psychological unconscious and, 544-545, 550, 553 Posterior cingulate cortex, 669–670 self-representation and, 291, 311-314, 486-488 signal detection in noise, 306–309 Post-process observations, 496–497, 509 causal determination and, 508 span of dimensionality and, 366 speech and, 1011-1012 individual analysis and, 506-508 subjective threshold and, 519-540 retrieval problems and, 504-506 subliminal, 517, 546-551, 781-784, 888 (see also short-term memory and, 504-509 Preattention, 634-637 Unconscious processing) temporal lobe and, 101-111 Preconsciousness, 15, 17 triangular circuit and, 299-314 fringe experience and, 781–784, 787–789 ventral stream and, 181-182 Predation, 991 visual pathways and, 175-184, 325-356 Prefrontal cortex, 292 Percepts, 41–43, 48–49, 58–59 functional duality and, 395-397 Perseveration, 399-400 Global Workspace model and, 1142 Petersen, Steven E., 655-656 multiple domains and, 400-402 object storage and, 413-415 Peterson, Lloyd R., 381-382 Peterson, Margaret, 381–382 on-line processing and, 397-399 Philosophy, 35 perseveration and, 399-400 dualism, 46 processing levels and, 402-404 isomorphism and, 185-200 slave systems and, 404

Prefrontal cortex (cont.) REM sleep, 85, 820–825, 939, 944 (see also Dreams) anesthesia and, 924-925 spatial storage and, 413-415 supervisory attentional system and, 404 asymmetry of, 840 auditory system and, 966 verbal storage and, 409-412 working memory and, 397-400 awakening thresholds and, 968-969 Prehension, 177–178 caloric stimulation and, 823 Presuppositions, 771–774 dreams and, 929-936 (see also Dreams) Priming effects, 762–764 dynamic core hypothesis and, 1002 amnesia and, 784-785 electrical stimulation and, 967-968 ART model and, 1027-1028 mapping of, 972-977 preconsciousness and, 781-784, 787-789 occurrence of, 930-931 Principles of Psychology (James), 1, 541 period length and, 932–933 Probability judgments. See Availability recall and, 931-932 Probability learning, 605-606, 608, 619 reticular activating system and, 856-858 Procedural memory, 580-581, 1028-1030 somatosensory system and, 966-967 Programmable Blackboard model, 1142 subjective referral and, 978-979 thalamus and, 970-972, 977-980 Project Grammarama (Miller), 604 Pulvinar, 302 vestibular stimulation and, 823-825 visual imagery and, 933-934 Oualia, 47-48 volitional communication in, 959-963 anesthesia and, 901-912 wakefulness and, 965-969 Rensink, Ronald A., 251-261 fringe experience and, 741–759 (see also Fringe Reportability, 4-5 experience) isomorphism and, 185-200 experience and, 22-23 limits of, 8-9 vision and, 60 Quantum theory, ix subjectivity and, 7–8 Repp, Bruno, 1014–1016 Rafal, R., 148 Representational realism, 615 Raichle, Marcus E., 655-675 Resonance theory. See Adaptive Resonance Theory Ramachandran, V. S., 805-829 (ART) Ramponi, Cristina, 697-720 Reticular activating system (RAS), 853–858 Rapid eye movement (REM). See REM Sleep Reticular complex. See Brain stem reticular formation Rationalization. See Anosognosia Rey, Georges, 902 Rauch, Scott L., 593-601 Richardson-Klavehn, Alan, 697-720 Reaction formation, 813 Riggs, L., 551 Reber, Arthur S., 603-630 Roelfsema, Pieter R., 125-146 Recoding, 368–370 Rorschach inkblots, 479–480, 677 Recollection, 734-735. See also Memory Rosch, E., 614–615 association and, 728-733 Runge-Kutta integration, 1047 environmental support effects and, 732-733 Russell, Charlotte, 227–234 measurement of, 721-735 Russell, D. Patrick, 113-123 offsetting automatic influences, 725-727 zero, 722-725 Saliency map, 1138 Recursive believer systems, 902 Savage, Cary R., 593-601 Rees, Geraint, 227–234 Scenario construction, 691-694 Referral. See Subjective referral Schacter, Daniel L., 593-601 Rehearsal, 373, 384-385 Scheibel, Arnold B. arousal and, 881-890 Reitman, Judith, 383 Relational Theory of Mind, 1054-1055 Global Workspace model and, 1137-1139, 1141

Singer, Wolf Schizophrenia, 1060 Schrodinger equation, 1040 binding and, 125–146 Search, 70–71, 74–76 temporal correlation hypothesis and, 1087–1111 Sketchpad, 390-393, 397, 404 observing strategies and, 332-335 short-term memory and, 375-376 Skills, 576-577. See also Learning; Motor tasks Searchlight hypothesis, 263–264, 266–267 Skin, 565, 567 Selective attention. See also Attention; Consciousness; Skinner, B. F., 1 Slave systems, 404 Awareness analyzers and, 210 Sleep, 96-99. See also Dreams; REM Sleep brain stem reticular formation and, 885-888 anesthesia and, 901-912 context and, 765-766 autoradiography and, 93-95 enhancement operations in, 298-299 brain stem reticular formation and, 859-877, 885 extrastriate cortex and, 273-277 cognitive conjunction and, 973-977 focus and, 212-213 external reality and, 971-972 general model of, 207-208 as functional deafferentation, 877 inputs and, 209-210 inferior olive and, 972 outputs and, 209-212 LGB and, 85, 87-88, 93-95 mapping of, 972-977 suppression and, 298 targets and, 210 paradoxical, 965–966 task classification and, 208-210 REM, 85, 929–936 (see also REM sleep) theater metaphor and, 1118 single-cell recording of, 85-87 unconscious processing and, 543-546 spatial mapping of, 972-977 Self-identity. See Subjective referral subjective referral and, 978-979 Semantic memory, 580–581, 585 temporal mapping of, 972–977 Shallice, T., 17-18, 664-665 thalamus and, 970-972, 977-980 Sheinberg, D. L., 101-111 triangular circuit and, 312 Sherrington, Charles, 837 2-deoxyglucose studies and, 91–93 Shevrin, Howard, 541-557 visual cortex and, 88-91 Shiffrin, Richard M., 373-388, 631-642 volitional communication in, 959-963 Shock treatment, 842-845 Smith, Edward E., 409-418 Short-term memory, 20–21. See also Memory Software agents. See Conscious Mattie (software ART model and, 1020-1023 control of, 373-388 Somatic expression, 838-839 free recall and, 376-383 Somatosensory system, 97, 570, 838–839 global guidance model and, 1056 backwards-in-time referral and, 566-568 post-process observations and, 504-509 binding and, 130 speech perception and, 1011–1012 electrical stimulation and, 43, 561 verbal reports and, 493-494 REM sleep and, 966-967 white noise and, 383, 386–388 response without experience and, 561-563 Signal-to-noise ratio (SNR) Spatial attention attention and, 306-309 binding and, 63-81 frequency-tagged responses and, 114, 121 coherent-ensembles study and, 424-446 Sillito, A. M., 1019 hemisphere deconnection and, 161-173 Silverman, A. J., 844-845 object storage and, 413 Simon, Herbert A., 493-513 temporal coherence and, 422-423 Simulations. See Models Spatial delayed-response (SDR), 401 Simultanagnosia, 72-73 Spatial mapping, 972 Singer, Dorothy, 484 cognitive conjunction and, 973-977

temporal simultaneity and, 973

Singer, Jerome L., 479-491

Spatial Principal Component Analysis, 427, 429–430, fringe experience and, 781–784 433 models of, 546-551 factor scores and, 428 vision and, 551 loading and, 435-437 Substantive cycling, 743-744 score curves and, 437-441 Sufi practices, 29 Speech Suicide, 692 Categorizal perception, 1014-1016 Superior temporal sulcus (STS) frontal lobes and, 409-412 perceptual organization and, 101-111 perception, 1011-1012 vision and, 42, 101-111 Spence, D. P., 548 Supervisory attentional system, 404, 664 Sperling, George, 6, 325-356 Supplementary eye field, 666 Sperry, R. W. Suprasylvian sulcus, 1100 cerebral specialization and, 831-833, 836-837 Sylvian-insular cortices, 663–664, 667 hemisphere deconnection and, 161-173 Symmetry, 1042 Spike density functions (SDFs), 103, 107, 109, 127, 266 Synapses, 1043-1044 Split brain, 59-60, 149, 474, 824, 835-836, 1119 cell assemblies and, 268-270 Srinivasan, Ramesh, 113–123 Malsburg, 267-268 Stability-plasticity dilemma, 1008 Synchrony Statistical parametric mapping (SPM), 233n18 asynchrony onset and, 524–529, 533 anesthesia studies and, 913-927 attention and, 138-140 Stein, Gertrude, 479 binding and, 64 (see also Binding) Sternberg, Saul, 375, 545-546 cortex and, 1094, 1097 Stoerig, Petra, 5, 59, 155-159 evidence for, 129-134 Strabismus, 133-135 experience-dependent influences on, 1101-1103 Stress, 486, 611 hemispheric interactions and, 1095 Stroop effect, 283, 285, 399–400 hippocampus and, 1097, 1099 frontal lobes and, 415-416 imaging and, 140 subjective threshold and, 522-526 intercolumnar interactions and, 1093-1095 Subitizing, 365 intracolumnar interactions and, 1090-1093 Subjective referral, 7-8 nonvisual structures and, 1095-1099 anesthesia and, 901-912 oscillations and, 137-138 context and, 761-775 phenomenal consciousness and, 134–138 cortex and, 980 population coding and, 1087-1090 discrepancies in, 486-488 stimulus dependence and, 1099-1101 dreams and, 978-979 subjective, 567, 570 fringe experience and, 741-759 (see also Fringe Synfire chains, 269 experience) Synthetic language, 604, 606 presupposition and, 771–772 REM sleep and, 932-933 Tachistoscope, 326 synchrony and, 567, 570 Tacit knowledge, 620-621 thalamus and, 980 anosognosia and, 809-818 time and, 565-567, 583-585 virtual reality and, 812-813 Subjective threshold, 519–521, 540 Taira, M., 180-181 color and, 522-536 Task-unrelated images and thoughts (TUITs), 481invisible primes testing and, 526-536 482, 484-485 Stroop effect and, 522-526 Taylor, J. G., 1035–1058 synchrony and, 567, 570 Television, 669 test conclusions for, 536-539 Temperature, 1046 Subliminal perception, 517, 888. See also Unconscious Temporal binding, 125. See also Binding

advantage of, 140

processing

attention and, 138–140	content determinants and, 485-486
concept of, 126–129	individual analysis of, 506–508
evidence for, 129–134	mental imagery and, 457–468 (see also Imaging,
phenomenal consciousness and, 134–138	mental)
Temporal correlation hypothesis, 1107	sampling of, 482–484
experience dependence and, 1101–1103	signal detection and, 484–485
hemispheric interactions and, 1095	TUITs and, 481–482, 484–485
intercolumnar interactions and, 1093–1095	verbal reports and, 493–513
intracolumnar interactions and, 1090–1093	Thomas, Lewis, 805
nonvisual synchrony and, 1095–1099	Time
oscillation mechanisms and, 1103–1106	autonoetic consciousness and, 583–585
predictions of, 1090	global guidance model and, 1043
stimuli dependence and, 1099–1101	multiregional retroactivation and, 1059–1085 (see
synchronization and, 1095–1103	also Multiregional retroactivation)
Temporal lobe, 247–248, 460	subjective, 565–567, 583–585
Temporal mapping, 973–977	Tip-of-the-tongue phenomenon, 742, 745, 748, 754–755
Temporal Principal Component Analysis, 430, 441–	T mazes, 370
442	Tononi, Giulio
Thalamus	complexity and, 993–1005
anesthesia and, 913–927	frequency-tagged responses and, 113–123
attention and, 288, 302–303	Train duration (TD), 560–561, 563–565
brain stem reticular formation and, 264–266, 870–	Transient cell assemblies, 269
878, 886–888	Transitive cycling, 743–744
cell assemblies and, 268–270	Treisman, Anne M.
conjunctive state and, 979–980	binding and, 63–83
electrical stimulation and, 562–563, 569	selective attention and, 207–225
ERTAS model and, 923 event-related potentials (ERPs) and, 967–968	thalamus and, 263–264, 267
	unconscious processing and, 543–544
Global Workspace model and, 1134, 1140–1141 intralaminar nuclei of, 891–900	Triangular circuit 315, 318
Malsburg synapses and, 267–268	Triangular circuit, 315–318 activation of, 309–310
multiregional retroactivation and, 1060 (see also	awareness and, 310–314
Multiregional retroactivation)	description of, 299–302
neuron properties of, 266	disc player metaphor for, 304–306
NRT and, 1035–1040, 1052–1056	expressional control and, 303–306
orienting and, 282	rapid processing and, 310
REM sleep and, 970–972, 977–980	signal detection in noise, 306–309
searchlight hypothesis and, 263–264, 266–267	sleep and, 312
sleep and, 970–972, 977–978, 980	thalamus and, 302–303
subjective referral and, 980	Truth, 5
triangular circuit and, 302–306, 312	Tulving, Endel, 575, 579–591, 697
vision and, 263–272	Tversky, Amos, 677–695
Thatcher, Robert, 58	Tyler, Lorraine, 149
Theater of consciousness, 285	Tyler, Borrame, 117
attention and, 1114–1120	Unattended input
Global Workspace model and, 1132–1133	flicker sequences and, 252–260
Theory. See Models	lexical meaning and, 235–250
Thinking, 23	Unconscious processing, 2, 5–6, 518, 739–740. See also
aloud, 501–504, 509–510	Anesthesia; Consciousness
causes of, 508	backward masking and, 552–553
	E ,

Unconscious processing (cont.)	enhancement in, 299
binocular rivalry and, 551–552	phenomenal consciousness and, 135
cerebral specialization and, 831–850	Variance, 357–358
color and, 524–525, 528–530, 533–535	Varimax Analysis, 427, 429–430, 433
context and, 761–775	factor scores and, 428
dreaming and, 820–822	loading and, 435–437
electrical stimulation and, 559–571	score curves and, 437–441
encoding and, 545	Vector Associative Map, 1029
filter theory and, 543–544	Ventral stream of visual cortex, 1127–1129
fringe experience and, 741–759 (see also Fringe	animal studies in, 178–181
experience)	ARTSTREAM model and, 1016–1018
hemispheric specialization and, 831–850	attention and, 181–182
implicit learning and, 603–630	awareness and, 182
invisible primes and, 526–536	binding and, 63
memory and, 543, 545–546, 623 (see also Memory)	capacity and, 1123–1126
mentalism and, 24	color and, 63
models for, 543–546	content determinants and, 485–486
origins of, 621–622	Global Workspace theory and, 1125–1126
parsing of, 622–624	hemispheric specialization and, 837–838
positive set and, 546	imaginative play and, 484
psychological, 541–557	imaging and, 460
reaction time and, 546	prehension/apprehension and, 177–178
REM sleep and, 820–822	Rorschach inkblots and, 479–480
selective attention and, 543–546	self-report and, 480–481, 486–488
Stroop effect and, 522–526	signal detection and, 481–482, 484–485
subjective threshold and, 519–540, 567, 570	thalamus and, 264–266
subliminal perception and, 517, 546–551	thought sampling and, 482–484
theater metaphor and, 1119	triangular circuit and, 301–303
Underwood, B. J., 687	vision and, 175–184
Ungerleider, L. G., 175, 177	Verbal reports, 512–513
Unitization, 576	concurrent, 499–504
Chitization, 570	
V1 area	logic and, 495 mathematics and, 495, 501
attenuation index and, 273–276	memory and, 493–494
binding and, 71–74	observation criteria and, 496–499, 504–509
dorsal stream and, 175–176, 180	post-process observations and, 504–509
Global Workspace model and, 1142	protocol for, 509
phenomenal consciousness and, 135	questioning techniques and, 504–506
triangular circuit and, 299–300	reaction time and, 496
ventral stream and, 175–176, 180	retrospective, 504–511
V1 hypothesis, 43–46, 48	talk-aloud and, 501–504
V2 area	task selection and, 494–496
dorsal stream and, 180	think-aloud and, 501–504, 509–510
phenomenal consciousness and, 135	Verbal storage, 409–412
triangular circuit and, 299–300	Vestibular stimulation, 823–825
ventral stream and, 175–176, 180	Virtual Mattie, 1150, 1156
V4 area	Virtual reality, 812–813, 820–822
attenuation index and, 273–276	Vision, 36, 96–99, 1108–1111. See also Imaging
binding and, 72	mental
cortical columns and, 294–295	absolute judgement and, 361–364

afterimages and, 347–348 on-line system and, 39-41 ART model and, 1027 order of report and, 341–345 attention and, 64–71 (see also Attention) orienting and, 279–282 attenuation index and, 273-276 parietal lesions and, 71-74 basal ganglia and, 1138-1139 pathways for, 175-184 binding and, 63–81 (see also Binding) phenomenal consciousness and, 134-138 binocular, 41, 57-59, 101-111, 113-123, 142, 212picture delayed-response and, 401 population coding and, 1087-1090 218, 551–552 bistable percepts and, 41–43, 48–49 prehension/apprehension and, 177-178 blindsight and, 5, 39, 46 (see also Blindsight) qualia and, 47-48, 60 brief perceptions and, 325-356 recall and, 685-689 Broca's area and, 46 recoding and, 368-370 buffer memory and, 321-322 REM sleep and add, 85, 946, 948 (see also REM carbon monoxide poisoning and, 39-40 sleep) color and, 44-46 (see also Color) retinal image stabilization and, 551 combinatorial problem and, 1087 scene changes and, 251-261 Conscious Mattie agent and, 1162 search and, 70-71, 74-76, 332-335, 375-376 context and, 763, 767 single-cell recording of, 85-87 cortex and, 88-91, 175-176, 273-277 spatial sketchpad and, 390–393, 397, 404 disconnected awareness and, 147-154 strabismus and, 133-135 distribution of, 38 subliminal perception and, 551 dorsal stream and, 175-184 television and, 669 dreams and, 941-942 (see also Dreams) temporal correlation hypothesis and, 1090-1107 electric stimulation and, 43 temporal lobe and, 101-111 enhancement in, 298-299 thalamus and, 263-272 essentials for, 38–39 2-deoxyglucose studies and, 91–93 evoked responses and, 88-91 V1 hypothesis and, 43–46 explicit representation and, 37-38 ventral stream and, 175-184 exposure duration and, 330-331 working memory and, 389-393 Visual evoked response (VER), 552 feline processing of, 85–99 frequency tests and, 113-123, 685-689 Vogel, Philip J., 161–162 frontal lobe hypothesis and, 46, 48-49 Volitional communication, 959–963, 1027–1028 gamma oscillations and, 46 von der Malsburg, C., 267-270 hemisphere deconnection and, 161-173 iconic memory and, 16-17 Wada carotid amobarbital text, 841-842 ignored words and, 227-234 Wagon wheel model, 1139 illusions and, 817, 824, 1009 (see also Illusions) gating and, 1141–1146 inattentional blindness and, 227-234 Wakefulness, 853–855. See also Consciousness; Sleep; induced change blindness and, 251-261 Dreams; REM Sleep integration and, 993-994, 996-998 anesthesia and, 901-912 isomorphism and, 185-200 brain stem reticular formation and, 859-877, 885 lateral geniculate body and, 85, 87–88, 93–95 as intrinsic state, 969–972 lesions and, 59-60 lucid dreaming and, 959-963 lexical meaning and, 235-240 mapping and, 972–977 memory and, 38–39, 61, 576 (see also Memory) recall and, 931-932 motor tasks and, 60 REM sleep and, 965–969 (see also REM sleep) MT area, 41-43 reticular formation and, 859-880 multilevel representation and, 37-38 thalamus and, 977–978 Warren, Richard, 19, 1011 object recognition and, 1009-1010

Watson, John B., 1

observing strategies and, 332–335

Wegner, Daniel, ix Weiskrantz, L., 147–154 Wernicke's aphasia, 149 Wernicke's area, 285 White noise, 383, 386-388 Winner-take-all (WTA) networks, 1035, 1134, 1136-1137 Wise, Steven, 40, 666 Woolf, Virginia, 479 Working memory, 322. See also Immediate Memory binding problem and, 323 brain basis of, 323 frontal lobes and, 409-418 functional landscapes for, 432-435 lesions and, 397-399 multiple domains and, 400-402 perseveration and, 399-400 phonological loop and, 389-390 prefrontal cortex and, 397-400 ramifications of, 323-324 subsytems of, 389-393 visuo-spatial sketchpad and, 390-393 Wundt, Wilhelm, 235, 247, 326, 349, 373

Yogic meditation, 29

Zarcone, Vincent P. Jr., 959–963 Zeigarnik effect, 485 Zero recollection, 722–725 Zhang, Xuexin, 77 Zombies, 36 Zona incerta, 264