

Index

- absolute scoring, 734, 736, 739
absolutive, 292–295
abstract concept, 376
abstract model, 159
abstraction, 127, 159, 202, 204, 566
access routes, 539
accessibility hierarchy, 277, 283, 287, 302
accusative, 277, 284, 292, 294
acoustic representation, 81
acquired memory, 98
acquisition of language, 34, 73
acquisition of novel information, 862
action-based recall, 841
action-based recall, 840
activated long-term memory, 24–25, 73–74, 76, 86–87
activated part of the broader long-term memory system (aLTM), 910
activated representations, 146, 152, 371
activating mechanism, 152–153
activation, 76, 83
activation decay, 349–350
activation history, 371
Activation Hypothesis, 376
activation level, 152–153, 350, 373–374, 383
activation states, 124
active control groups, 892
active interventions, 892
active stimulation, 845
active-inhibition, 32–33
activity-silent computational models, 125
adaptive interventions, 890
adaptivity algorithms, 891
affective activity, 379
affective structures, 372, 377
affective system, 370
agent, 311, 447, 777–778, 781, 785
age-related hearing loss (ARHL), 206
agrammatism, 447
algorithmic orientation, 324
alphabetic systems, 615
Alzheimer's, 211, 496
ambiguous words, 448
anaphora resolution, 595, 599, 604
antecedent, 291, 323, 327–328, 338, 595, 603–604
anterior cingulate cortex (ACC), 130
anterior insula (AI), 126
anticipating, 714
antisaccade task, 251, 259
any order, 731
applied linguistics, 722
arithmetic operations, 22, 732
articulation, 21–22, 128, 145, 437, 811
articulatory loop, 21, 32, 187, 189–190, 348
articulatory processor, 34
articulatory rehearsal, 130, 181, 187, 807, 811, 916
articulatory rehearsal mechanism, 176, 179, 412, 807
articulatory rehearsal process, 21, 509, 805, 807
articulatory rehearsal, 51
articulatory suppression, 22, 61, 64, 77, 145, 709
assessment procedures, 4, 242, 911
associations, 52, 83, 109, 135, 198, 867, 918
associative chaining, 149
at-risk status, 894
attention, 80, 85, 186, 779
attention control, 8, 248, 265, 677, 751
attention control model, 305
Attention Network test, 710
attention training, 765, 884
attentional
attentional control model, 700
attentional load, 187, 562, 675
attentional processes, 88, 310
attentional control, 20, 24, 100, 126, 701, 751
attentional processes, 514, 749, 751, 760–761
attentional refreshing, 181–182, 184–187, 192, 194
attention-based view, 73
Attention-Deficit/Hyperactivity Disorder, 763, 882
atypically developing populations, 894
audiometric hearing loss, 207
auditory code, 370
auditory information, 36, 250, 807
auditory structure, 370, 372
auditory-verbal short-term memory, 6, 51
aural running span, 666–667, 671

- autapomorphy, 38
- automatic interactions, 384
- automaticity of language production processes, 498
- automatization, 507
- autonoesis, 37
- AX-CPT task, 469–470, 475
- backward Corsi block tasks, 425, 429
- backward digit span, 8, 220, 423, 429, 540, 670, 809, 822
- Baddeley and Hitch WM framework, 537
- Baddeley's multicomponent working memory model, 31
- basal ganglia, 125–126, 132, 440
- behavioural studies, 135
- best fit principle, 346
- bilateral, 112, 126, 130, 133
- bilateral caudate, 130
- bilingual control, 9
- bilingual/multilingual turn, 919
- bilingualism, 474, 710, 919
- binding, 23, 429, 784
 - binding memory task, 429
- biologically primary knowledge, 859
- biologically secondary knowledge, 859–861, 865, 875
- bottom-up processes, 615
 - bottom-up processing, 421, 762
- bounding node, 281
- brain atrophy, 207
- brain damaged individuals, 437
 - brain injury, 233
- brain plasticity, 893
- brain training, 883, 895
- broad-scope, 822, 825–826, 828
- Broca's aphasia, 40
 - Broca's area, 126, 130, 221
 - Broca's region, 126
- Brown-Peterson tasks, 183
- BUMP model, 163, 165
- CAF scores, 641
- CALF, 641–644
- canonical multiword representations, 791
 - canonical sentences, 778
- capacity limits, 9, 77, 285, 322, 379
- capacity theory of comprehension, 505
- capacity-based approaches, 594
 - capacity-based limitations, 597
- case series approach, 444
- categorical representation, 121
- categories of knowledge, 12, 859
- category probe task, 438, 444
- causal direction, 488
 - causality, 104
- ceiling effects, 261, 536
- center-embedded structures, 308
 - center embedding, 322
- central capacity limits, 379
- central executive, 421–422, 507–508, 513
 - central executive control, 551, 661
 - central executive system, 74, 723, 751, 759
- cerebral cortex, 33
- chaining models, 149, 151–152, 166, 170
- children's comprehension, 786, 790–791, 795
- choice reaction time task, 180
- Chomsky's single gene hypothesis, 42
- chronological age, 758, 760–761, 806
- chunk-and-pass model of language processing, 782
- chunking, 24, 100, 564, 789, 918
 - chunking theory, 101
 - chunks, 10, 24
- classical conditioning, 40
- clause boundaries, 332
- clinical populations, 884, 886, 896
- coactivation of L2, 472
- cochlear implants (CIs), 802
- code-switching, 386
- coding rehearsal, 184
- coding scheme, 155, 726, 741
- Cogmed Working Memory Training program, 823
- cognates, 615
- Cognition Hypothesis, 640–641, 643, 648, 650, 654, 659, 681–682, 689
- cognitive adaptation, 715
- cognitive aging, 207
- cognitive consequences of mismatch, 203
- cognitive control, 130, 133, 468–470
- cognitive development, 812, 909
- cognitive effort, 504, 515, 702, 714, 738
- cognitive flexibility, 428, 513, 809
- cognitive fluency, 507
- cognitive impairment, 198, 207
- cognitive individual difference, 659, 661
- cognitive linguistics, 346, 352
- cognitive load, 490, 910
 - cognitive load theory, 838, 844
- cognitive load
 - cognitive load theory, 703, 867
- cognitive modeling, 484
 - cognitive models, 346, 511, 910
- cognitive sciences, 5
- cognitive system, 9, 120, 123, 368, 388, 866, 912
- cohesive model, 78
- commands, 40, 179, 839
- communication, 35, 38, 199, 411, 647, 804, 919
- communicative discourse, 197
- communicative efficiency, 279, 290, 296
- communicative intention, 199
- compensation effects, 894
- compensatory strategies, 444
- competitive queuing (CQ), 149
- complementizer, 323, 334–335, 337, 358
- complex divided attention tasks, 756
- complex span measures, 8, 110, 247, 249–250
- complex span tasks, 177–178, 264, 805, 836
- complex WM tasks, 422–423, 530, 541–542, 740, 812
- complexity, 290, 424, 498, 557, 584, 618, 640–642, 650, 659, 682, 803, 867
 - complexity level, 642
 - complexity, accuracy, and fluency (CAF), 639, 659, 671
- component models, 804
- component scores, 259, 264
- comprehension, 7–8, 11, 20, 82, 98, 100, 108, 112, 122, 128, 130, 134, 147–148, 820, 827, 871
 - comprehension checks, 732
 - comprehension monitoring, 462–463, 466, 473–474
 - comprehension questionnaire, 674
- computation efficiency, 914
- computational modeling, 141, 149, 157

- computational resource, 305
 computerized training, 842
 conceptual frame, 375
 conceptual knowledge, 563
 conceptual modules, 381
 conceptual processor, 383
 conceptual representations, 204, 383, 440, 453
 conceptual scoring, 751
 conceptual system, 370, 382–383
 conceptual-intentional interface, 128
 conceptual-intentional system, 38
 conceptualization, 608
 conceptualizer, 636–637, 647–648
 concreteness effect, 183
 concurrent articulation, 21, 176, 187
 concurrent attentional demand, 181, 183, 187
 concurrent processing component, 724
 concurrent syntactic reasoning task, 20
 conflict monitoring, 133, 718
 congenital deafness, 802, 811
 congruent information, 467
 conscious effort, 132, 860, 862, 864
 conscious experience, 375, 377, 388
 conscious language processing, 383
 conscious processing, 373, 388, 639
 consciousness, 37, 77, 112, 230, 370, 374, 383,
 909, 912
 consciousness threshold, 376
 consecutive interpreting, 387, 698
 consensus themes, 912–913
 consensus theory, 158
 consolidation, 91, 412, 916
 conspecifics, 35, 38, 40
 construct validity, 739
 construction grammar approach, 562
 construction-integration model, 106–107
 constructivism, 861
 contemporary cognitive science, 369
 content and language integrated learning, 875
 content word, 89, 442–443
 contralateral delay activity, 125
 controlled attention, 99, 250–252, 254, 751, 779,
 782, 790, 792
 controlled attentional processes, 749, 761
 convenient rationale, 861
 co-occurrence patterns, 555, 561
 coordination, 35, 129, 504, 512, 514, 704, 887
 copying task, 509
 core deficit theory, 837
 corpora, 166, 275–276, 283, 288, 290, 307
 corrective feedback, 565, 658, 660–661, 682
 Corsi block-tapping task, 575
 counterintuitive effect, 890
 counting span, 263, 423–424, 666, 805
 cross-linguistic influence, 387
 cross-linguistic transfer, 53
 cross-situational statistical learning, 557, 560,
 562
 crystallized intelligence, 798
 cue availability, 564
 cue reliability, 564
 cue-based parsing, 451, 595–596, 598, 603
 cued recall task, 625
 Cultural Explosion, 43
 cut-off points, 277, 287–288, 750
 deaf and hard of hearing (DHH) children, 801
 deafness, 12
 decay, 21, 157, 176, 349, 708
 decision-making, 3, 227
 declarative, 31, 36–37, 40–41, 44, 781
 declarative memory, 75, 82, 791
 declarative memory system, 780
 Deep Knowledge of French Vocabulary Test, 532
 deficit model, 756
 delayed-response tasks, 124
 Deliberate switching, 386
 D-ELU model, 206, 208, 211
 dementia, 8, 198, 207, 211
 demonstration, 65, 474, 786, 841, 847
 dependency distance, 343, 348, 350, 353–354,
 357–358, 360, 395
 dependency distance, 356, 402
 dependency distance minimization, 351,
 353–358
 dependency grammar, 343
 Dependency Length Minimization, 355
 dependency parsing, 343, 345
 dependency tree, 344–345, 354, 360
 dependents, 306, 308, 344, 355, 396
 depth hypothesis, 338, 404
 depth of text representation, 541
 depth of vocabulary, 541
 developmental deficit, 448
 developmental lag model, 756
 diagnostic profile, 894
 Dictogloss tasks, 678, 695
 difference scores, 258–259, 264
 differential psychology, 262
 digit matching task, 445
 digit recall, 428, 475, 824, 840, 844
 digit span task, 99, 161, 707
 digit span tasks, 161, 429, 452, 540, 731, 736, 809
 digit tasks, 533
 direct chunk, 397
 direct constituents, 397
 direct mapping, 324
 direction of causation, 534
 discourse completion test, 674, 695
 discourse comprehension, 7, 106, 109, 593, 615,
 627
 discrete representations, 120–121, 125
 discrimination, 58, 60, 85, 226, 311,
 438, 758
 disease, 131
 disengagement, 256–257, 700
 disharmonic head orderings, 283, 286
 dissociation, 181, 437
 distal domains, 887, 891, 895–896
 distal measures, 886
 distal targeted outcomes, 884
 distractor interference, 467
 distributed learning, 890
 distributional, 556–557, 780, 783
 disuse, 198, 200, 206, 208, 560
 divide-and-conquer approach, 135
 DLMR 1, 355
 DLMR 2, 355
 DLMR 3, 355
 domain-general attentional process, 436
 domain-general executive control, 913
 domain-specific abilities, 264, 710
 domain-specific knowledge, 861
 domain-specific measures, 883
 domain-specific model of working memory, 435
 domain-specific system, 187

- dorsolateral prefrontal cortex, 123, 139, 221, 488, 792
- Down syndrome, 56, 70
- Dual Route Cascaded model, 539
- dual-task experiments, 144
- dual-task paradigm, 723, 852
- dyslexia, 147
 - dyslexic children, 53, 755
- early immediate constituents, 289
- ear-voice span, 714
- edge effects, 155
- EF training, 886
- efficacy, 660, 673, 842
- efficient capacity account, 487
- E-language, 44
- electrophysiological recordings, 124
- element interactivity, 867–868, 873
- elicited imitation test, 675
- ELTM postdiction, 202
- ELU-WM model, 199
- embedded-process model, 305
- embedded-processes model of working memory, 24
- embedded-processes models, 435–437, 451
- embodied cognition, 840
- emergentist approach, 323
- emergentist theory, 326
- emotional fluctuation, 716
- emotional valence, 34, 36
- empirical phenomena, 158–160
- enactment-based encoding, 840
- encephalization quotient, 41
- encode, 7, 100, 121, 127, 598, 810
 - encoding, 105, 840, 846
- English as a medium of instruction, 875
- English language learners, 57, 751, 763–764
- enhanced working memory, 44
- entorhinal cortex, 125
- environmental factors, 711, 750
- episodic buffer, 6, 23, 37, 177, 530, 918
- episodic long-term memory, 504
- episodic memory, 31, 36–37, 45, 638
- ergative, 285, 292, 294–295
- error detection, 512, 517
- error types, 441
- Eurocentres Vocabulary Size Test, 531
- evaluation, 220, 224, 462
- event-related potential technology, 918
- event-related potentials, 129, 131, 465
- everyday functioning, 882, 887–888
- evolutionary psychology, 859
- exclamatives, 40, 45
- executive attention theory of working memory, 248
- executive components of working memory, 513, 522
- executive control, 24, 505
- executive function, 513–514, 516, 518, 577, 662, 705, 711, 713, 837, 884, 916–917
 - executive function abilities, 452
 - executive function training, 884
 - executive functioning, 219, 227, 255, 452
 - executive functions, 31–32, 227, 233, 809
 - executive functions of the frontal lobes, 32, 36
- executive loop, 179–182, 184, 186–187, 189–190
- executive processing, 225, 756–758, 761–762
- executive WM, 189, 539–542, 737–738, 765
- executive working memory, 221, 227–228, 230–232, 240–241, 517, 642, 657, 917
- Experimental and Individual Differences, 889
- experimental considerations, 889, 896
- experimental psychology, 378
- experimental validity, 888
- expertise reversal effect, 869–871, 873
- explicit instruction, 553, 565, 580, 674, 695, 862, 876
- explicit memory, 36, 82, 535
- explicit processing, 200, 383
- external sensory-motor interface, 128
- Extraction and Integration Framework, 556
- extraneous cognitive load, 867–871, 873
- extraneous load, 704, 716
- extrapolation, 282
- extreme-groups design, 264
- eye-tracking, 918
 - eye-tracking paradigm, 441
- fact retrieval, 249, 460
- faculty of language in the broad sense, 38
- faculty of language in the narrow sense, 38
- fade-out effects, 895
- false alarms, 202
- falsification, 25
- familiar prosodic skeletons, 538
- far transfer, 823–824, 903
- dar-transfer, 823
- fast mapping, 55, 69
 - fast-mapping production, 56
- fatal error, 37
- filled delay, 101
- fingerspelling codes, 806
- finite verb, 344–345, 776
- first language, 419
 - first language acquisition, 5, 10, 328, 861
 - first language processing, 647
 - first language speech production, 636
- fixation durations, 467
- Flanker task, 265, 710
- flat structure, 416
- flexibility, 10, 33, 133, 277, 483–484, 491, 493, 497, 513, 807
- fluency, 442, 506, 563, 584, 639–640, 673
 - fluent speakers, 447
- fluid intelligence, 252
- fluid reasoning, 239–240, 781
- fMRI studies, 112, 126, 129, 439, 755
 - functional magnetic resonance imaging, 122, 755
- focus of attention, 77
- foramen magnum, 40
- foreign-word repetition, 535, 537
- formulation, 484, 659
- forward digit span, 220, 428–429, 558, 723, 727
- forward nonword span, 727
- four-talker babble background, 205
- free mixing of languages, 386
- free recalls, 625–626
- frequency, 76, 163, 183, 825
- frontal operculum, 130
- function morphemes, 129
 - function words, 63, 358–360, 408, 443, 485
- functional neuroimaging, 121
- functional processing, 86

- fusiform gyrus, 111
 Fuzzy Trace Theory, 185
- gamification, 891
 gamified cognitive training paradigms, 891
- Gammification
 Gamma oscillations, 378
- garden path sentences, 83, 109, 448
- gating paradigm, 202
- general intelligence, 23, 56, 750
- general monitoring difficulties, 757
- general WM, 109–110, 160, 529, 538, 540, 576, 627, 884
- general-domain capacity, 542
- generative grammar, 275, 277, 330–331, 334
- generic sound representation, 370, 372
- generic working memory model, 558–559
- generic-cognitive knowledge, 861
- genotypic differences, 43
- germane load, 704, 716, 869
- Gestalt Effect, 409
- gist representation, 185
- global capacity, 378
- global level, 371, 515
- global synchronization, 376–377, 383, 386
- global working memory, 372, 377, 379, 386, 388
- Google Scholar, 249, 661, 726
- Government and Binding theory, 338
- governor-dependent relations, 344
- gradualists, 42, 45
- grammatical complexity, 207, 490, 778
 grammatical complexity hypothesis, 779
- grammatical constraints, 281
- grammatical conventions, 276–278, 283
- grammatical encoding, 129, 290, 484, 490, 497
- grammatical morphology, 776
- grammaticality effect, 602
- grammaticality judgement test, 675, 677
- gray matter, 133, 207
- group work, 661, 678
- grouping, 156, 163, 224–225, 442, 644
- habitual modes of speech, 205
- habituation, 33, 80, 309
- hard constraint, 277
- head-final grammars, 295
- head-final language, 442
- head-initial language, 442
- headlist, 345–346
- hearing loss, 207, 210
 hearing loss effect, 206–207
- hearts-and-flowers task, 428
- Heschl's gyrus, 123, 129
- heterogeneity, 802, 806, 887, 895
- high attachment, 599–600
- high-capacity working memory readers, 461
- higher-order cognition, 110, 882
- Highest Number Task, 540–541
- high-level cortical areas, 127
- High-Level Language Aptitude Battery, 577
- high-level processing, 375
- high-level text comprehension processes, 461, 468, 471, 473
- high-probability nonwords, 554–555
- high-span readers, 600
- Homo erectus*, 39, 42, 45
- homophone, 21
- hubiness, 357
- human cognition, 3, 913
- hypothesis generation, 459
- ignored channel, 80
- I-language, 44
- immediate consciousness, 913
- immediate memory, 9, 21, 24, 146
- immediate serial recall, 52, 145, 188, 578, 807
- impaired semantic WM, 443–444
- imperatives, 40, 45, 206
- implicit learning, 579, 780, 786
- Implicit memory, 534
- incremental processing, 305, 345, 595, 601
- incremental validity, 254, 265
- index memory capacity, 779
- indicative mood, 44
- individual differences in working memory, 248, 468
- individual expert systems, 374, 379
- individual variation, 598, 605, 607
- inference, 623, 626
 inferencing, 541, 547, 625, 631
 inferential monitoring, 470–471, 474
- inference making, 462, 473
- inferior frontal gyrus, 123, 129
- infill error, 156
- inflated cortical map, 122
- information processing, 127, 202, 290, 322, 807, 811
- information storage, 249, 698, 707, 710, 715, 779
- information store principle, 863, 865
- information updating, 913
- Inherently internal context, 375
- inhibition, 10, 152, 428, 711
 inhibitory control, 23, 228, 466, 837
- innate linguistic knowledge, 380
- inner ear, 22, 27, 146, 148
- inner speech, 34, 38, 44, 180, 812
- inner voice, 22, 146, 148
- input phonological buffer, 445, 448, 453
- input theory, 861
- input-based theory, 861
- instant chunk number, 10
- instructional consequences, 859
- instrument reliability, 737, 740–741
- integrated model of sentence comprehension, 781
- Integrated-integrated group, 873
- integration, 11, 100, 112, 916, 918
 integration of information, 32, 248
- integrative Phonological/Executive model, 916
- intelligence, 33, 761
- intensive learning period, 534
- intentional reasoning, 641, 645, 681–682
- interaction hypothesis, 658
 interaction-based learning theories, 861
- interfaces, 128, 603
- interference, 166, 305, 350, 451, 453, 491, 596–597, 604, 706, 712, 751, 882, 886
- interference effect, 452, 491
- interference studies, 484
- interference-based approach, 593, 595–597
- interlocutor, 386, 650, 656, 658, 661–663, 671–674
- intermediate phrases, 496
- internal context, 372, 379
- internal inconsistencies, 464
- interpositions, 150, 157

- interpreters, 387, 698, 700–703, 705, 707, 709, 711, 713
- interrogatives, 41, 45
- intonational phrases, 496
- intransitive structures, 356
- intrinsic cognitive load, 867–868
- intrinsic load, 704, 716
- intrusions, 150, 156
- intuition, 38, 283, 286, 347, 397, 409, 573
- inverse-preference effects, 670
- IQ scores, 763, 821
- Isolated Elements Effect, 873
- isolated-integrated group, 873
- item response theory, 261
- judgment score, 734–735
- knowledge-based inferences, 462, 468
- L1 development, 533
- L1 phonological knowledge, 537
- L2 acquisition and processing, 593, 596, 722–723
- L2 comprehension, 460, 468–469, 471, 475, 725, 917
- L2 interaction, 11, 658, 667, 675, 686
- L2 phonological learning, 537
- L2 processing, 460, 470, 586, 594–595
- L2 receptive DOV, 540
- L2 vocabulary, 58, 538, 552–553, 917
- language coactivation, 472, 474
- language comprehension, 98
- language conversion, 388
- language development, 8, 90, 805
- language device, 397, 410–412
- language knowledge bias, 541
- language knowledge system, 539
- language LTM, 781–782
- language model, 635
- language processes, 13, 73, 88, 122, 129, 131, 338, 435
- language processing, 437, 468, 783, 808
- language production, 135, 440
- language transfer, 700, 711
- language typology, 9, 276, 280, 412
- language-related episodes, 661
- late closure strategy, 402
- latent variable analyses, 252, 263
- learned information, 33
- least effort principle, 9
- left anterior negativity, 333
- left hemisphere stroke, 440, 444–445, 451
- left inferior frontal gyrus, 129
- left inferior parietal region, 439
- left middle frontal, 439
- left superior temporal gyrus, 129
- left supramarginal gyrus, 439
- lemma retrieval, 636, 644, 648
- lemmas, 440, 490, 636, 648
- lesion overlap study, 439
- lesion studies, 130, 134
- Less-Is-More hypothesis, 190
- letter recall, 731, 824
- Levels of Processing hypothesis, 19
- Levelt model, 639
- lexical activation hypotheses, 83
- Lexical Bottleneck Hypothesis, 598
- lexical complexity, 639, 641, 645
- lexical decision task, 438, 505
- lexical diversity, 639, 642–643, 645, 650
- lexical head principle, 444
- lexical information, 106
- lexical item, 86, 328
- lexical prediction, 469, 474
- lexical representations, 55, 127, 133, 147, 208, 436, 598
- lexical retrieval, 203, 505, 516
- lexical route, 539
- lexical selection, 86, 128, 484
- lexical-semantic knowledge, 135, 206, 836
- lexical-semantic planning, 441, 443
- lexical-semantic representations, 440, 444, 453, 455
- lexicon, 82, 127, 651
- Limited Attentional Capacity approach, 640
- limited working memory, 84, 91, 134, 594, 698, 777, 865, 874
- limited-capacity system, 722
- linearity, 343
- linguistic chunks, 398
- linguistic development, 11, 613
- Linguistic Emergentism, 323
- linguistic forms, 306, 658–659, 670, 861
- linguistic processing, 249, 372–373, 379, 472, 615
- linguistic structures, 83, 395, 550, 557, 582
- linguistic structures, 370
- linguistic typological perspective, 915
- Linguistically Constrained Computational Models, 158
- Linguistics and Language Behavior Abstracts, 661
- LIST PARSE model, 153
- listening comprehension, 248, 702, 705, 711
- listening span (LSPAN), 666, 683
- listening span task, 423, 538
- local processing, 374–375, 378
- local synchronization, 378
- local working memory, 374
- locality constraint, 150–151, 156
- logographic systems, 615
- longitudinal assessments, 895
- long-term knowledge, 25, 60, 90, 165, 436, 564, 912
- long-term language knowledge, 533, 555, 565
- long-term phonotactic knowledge, 135
- long-term working memory, 98, 134
- loss of precision, 121
- low-capacity working memory readers, 461
- low-span readers, 599
- magnetoencephalography, 122
- maintenance, 179, 181, 184
- maintenance effects, 825
- maintenance rehearsals, 185
- Major Branch Analysis, 398
- manual articulatory suppression, 807
- markedness hierarchies, 276
- matching tasks, 446
- math disabilities, 749–750
- maximize online processing, 291, 295, 402
- maxispan procedure, 188–189
- MCPH1, 43
- mean dependency distance, 402
- mean utterance length, 444–445
- meaning deviants, 202
- meaning representations, 450
- meaningful associations, 105
- medial temporal lobe, 130

-
- mediator, 105, 784, 787, 792
 memoranda, 182, 249, 256
 memory decay, 394
 memory load, 87, 90, 124–125, 210, 439, 500,
 758, 867, 871–873
 memory retrieval, 598, 705, 913
 memory span, 21, 176
 memory span tasks, 460, 600, 715, 911, 916
 memory system, 21, 24, 211, 837
 memory system changes, 206
 memory trace, 19, 21, 107, 184
 mental vocabulary, 127
 message encoding, 486, 494, 497
 message level, 485, 489
 message planning, 483–484, 486, 488, 496–497
 meta-analysis, 566
 meta-cognitive skills, 893
 meta-cognitive strategies, 812
 metagrammatical knowledge, 383
 metagrammatical representations, 383
 methodological rigor, 12, 723, 725
 Michigan Test of English Language Proficiency,
 583
 microcephalin, 43
 middle frontal gyrus, 123
 middle temporal gyrus, 111, 123
 mild cognitive impairment, 198
 minimalism, 338
 minimize domains, 277, 286
 minimize forms, 291, 402
 mismatch detection task, 467, 469
 mixed effects model, 452
 mixed model of working memory, 508
 mnemonic activity, 77
 Modal Model, 19, 144
 models of language production, 483, 495
 Modern Language Aptitude Test, 576, 675
 modified output, 669
 Modular Cognition Framework, 368
 morphemes, 86, 129–130, 158,
 560, 578
 morphology, 293, 563, 776
 morphosyntactic agreement, 582, 601, 604
 morphosyntactic knowledge, 580,
 613, 615
 motivation engagement, 891
 motor control, 112, 125, 440
 motor processes, 126
 motor representations, 376
 motor system, 379
 multicomponent model, 23, 25–26
 multicomponential framework, 530
 multicomponent model of working memory, 25,
 77
 multidimensional representation of the text,
 505, 518
 multilingualism, 909
 multimodal stimulation, 205
 Multiple-Choice Tests, 622
 multivariate lesion-symptom mapping study,
 439
 multivariate pattern analysis, 439
 multi-voxel pattern analyses, 125
 multiword chunks, 783
 N400 response, 111, 202
 narrow-scope, 822–825, 828
 native language, 34, 65
 native vocabulary knowledge, 54
 natural contraction, 330
 natural selection, 43
 natural syntax, 9, 322
 naturalistic approaches, 861
 n-back task, 201, 209, 710, 824, 883
 near transfer, 823, 826, 828
 Nelson-Denny Reading Test, 621
 neocortex, 33
 neural basis of phonological WM, 439
 neural basis of semantic WM, 439
 neural model, 80
 neuroimaging studies, 124, 133, 755, 792
 neurological studies, 484
 neutral condition, 465
 nominative, 277, 292–294
 nonadaptive interventions, 890
 noncanonical sentences, 785, 788–789, 798
 nonfluent agrammatic speakers, 447
 noninterpreter bilinguals, 698, 710, 712
 noninvasive neuroimaging methods, 124
 nonlinguistic conceptual representations, 440
 nonlinguistic context, 372
 nonselective access, 9, 385
 nonstrategic passive store, 305
 nonupdate condition, 465
 nonverbal ability, 62
 nonverbal information processing, 712
 nonverbal intelligence, 58, 776
 nonverbal WM tasks, 729, 808
 nonword repetition, 52, 54
 nonword repetition ability, 57
 nonword repetition test, 58
 nonword sequence, 532
 normative, 239
 noticing, 81, 565, 573
 no-training control, 845
 noun phrase, 293, 354, 397
 novel phonological forms, 57, 160, 917
 novel words, 62, 70, 173, 208, 578
 numerical WM task, 540
 object relative structures, 449, 778
 oculomotor Stroop task, 474, 480
 odd-one-out test, 666
 offline inferences, 462
 omissions, 156, 709, 713
 one-dimensional successions, 343
 online comprehension, 449, 464, 468
 online inferences, 104
 online parsing, 110
 online planning, 643–647, 649
 online processing, 291, 581
 onset latencies, 441–443
 operant conditioning, 33
 operation span, 81, 641, 646, 665
 operation span task, 261, 620, 826
 Optimality Theory, 277, 289
 optionality, 9, 387
 oral modality, 531
 Orbitomedial PFC, 377
 orienting response, 80–81, 84
 orthographic information, 504
 orthographic lexicon, 510
 orthographic systems, 615
 Oscillator-Based Associative Recall (OSCAR)
 model, 155
 output encoding, 129

- output phonological buffer, 445, 448, 453
- output phonological code, 448
- outside-in representations, 386
- pair work, 661
- paired-associate learning task, 57
- parietal cortex, 112, 123, 125, 127, 131, 377
 - parietal P300, 466
- pars opercularis (BA 44), 123, 130
- pars orbitalis (BA 47), 123
- pars triangularis (BA 45), 123, 130
- participant-specific characteristics, 889, 896
- part-whole relation, 344
- passive control groups, 892, 897
- passive structures, 778
- passive voice, 82, 89
- pattern recognition abilities, 782, 791
- patterns of sentence comprehension, 786
- Pavlovian conditioning, 35, 40
- Peabody Picture Vocabulary Test, 55, 531
- perceptual representations, 376, 381–382
- perceptual stores, 377
- perceptual systems, 370, 372, 836
- performance plateau threshold, 890
- performance preferences, 275–276, 278, 288–289, 296, 314
- Performance-Grammar Correspondence Hypothesis, 6, 276, 283–285, 288, 323
- peripheral (“third”) factor, 394
- peripheral (local) capacity, 379
- peripheral storage, 784
- persistent delay period activity, 124
- phenotypic differences, 43
- phoneme discrimination task, 64
- phonemes, 52, 81, 128
- phonemic similarity effect, 145
- phonetic coding stages, 484
- phonological awareness, 58, 370
- phonological awareness, 423
- phonological buffer, 453, 494
- phonological characteristics, 182
- phonological coding, 63–64, 145, 533, 806
- phonological contraction, 327
- phonological encoding, 136, 483, 485–486
- phonological encoding, 494
- phonological errors, 160, 445–446, 494
- phonological facilitation, 442
- phonological input buffer, 51, 64, 446
 - phonological input buffer deficit, 64
- phonological interference, 509, 705, 711–712, 715
- phonological learning, 65
- phonological loop capacity, 147
- phonological output buffer deficit, 446
- phonological planning, 441, 443, 494–497
- phonological processes, 56, 530, 751, 757, 762
 - phonological processing, 226
- phonological reactivation, 448
- phonological rehearsal process, 759
- phonological representations, 6, 836
- phonological retrieval, 445
- phonological route, 539
- phonological scope of planning, 443
- phonological short-term memory, 661
 - phonological short-term storage, 224
 - phonological short-term store, 51, 60
- phonological short-term memory, 55
- phonological similarity, 21, 52, 807
- phonological similarity effects, 437–438
- phonological storage, 21, 762
- phonological store, 22, 32
- phonological structures, 58, 62, 394
- phonological system, 23, 749, 758, 760–761
- phonological traces, 176, 189
- phonological vocabulary, 52
- phonological WM
 - phonological WM deficit, 438–439, 443, 449–450
- phonological WM, 447
- phonological word form learning, 537
- phonotactic probability, 554
- phonotactic rules, 533, 729
- phrasal scope of planning, 443
- phrase structure grammar, 343–344
- picture pointing task, 779
- picture-word interference paradigm, 490
 - picture-word interference task, 452, 495
- placebo, 892
- polyglots, 62
- positron emission tomography (PET), 124
- postcentral gyrus, 126, 131, 440
- postdiction-prediction interaction loop, 211
- posterior parietal cortex, 125
- posterior regions of the temporal lobe, 130
- postinterpretive processes, 449, 453
- Post-it Note, 822
- post-N400 positivity, 469, 475
- posttraumatic stress disorder, 36
- power-law distribution of dependency distance, 354
- practice effects, 823
- pragmatics of speech, 35, 41–42, 45
- prefrontal cortex, 123
- premotor cortex, 123, 125
- presupplementary motor area, 123
- pretask planning, 640, 643–644, 646, 649, 651
- primacy effect, 150–151, 155–156, 189
- primacy gradient, 151, 153–154, 156
- Primacy of Meaning Model, 573
- primary auditory cortex (BA 41), 129
- primary memory, 74
- priming studies, 659
- primitives, 285, 370
- principle of Acquisition by Processing, 381
- proactive control, 470, 473–475
- procedural deficit hypothesis, 780
- procedural mechanisms, 886
- procedural memory, 82, 702, 779–780, 796
- process planning, 515
- processing capacity, 425, 606, 616, 682, 723
- processing cost, 323, 326, 328–329, 332, 334, 337–338, 342, 615
- processing determinism, 325
- processing efficiency, 307–308, 314, 325, 359, 701
- processing load, 277, 285, 351, 562, 677–678, 681–682, 685
- processing of sensory input, 379
- processing speed, 226
 - processing speed contributed, 757
- processing subtasks, 249, 251, 256
- processing task, 618, 723, 725, 727, 729, 732, 737
- productive L2 BOV knowledge, 540
- pronominal reference, 249, 460
- proposition, 10, 614, 626, 638
- prose, 20, 22, 144

- prose (cont.)
 prosodic encoding, 494
 prosodic information, 128
 prosodic intonational phrase, 485
 prosodic planning, 495
 prosodic structure, 483, 495, 538
 prosody, 163
 protolanguage, 39, 42, 45
 proximal domains, 884, 887, 895
 proximal targeted outcomes, 884
 pseudoword repetition accuracy, 57
 pseudoword span task, 535
 pseudowords, 65, 533
 psychometric, 623, 750
 putty-nosed monkeys, 35, 39
- Quantitative Production Analysis (QPA), 444
- random assignment, 892
 randomness as genesis principle, 862–864
 rapid automated naming (RAN), 423
 Raven Colored Progressive Matrices Test, 761
 reaction times, 452, 618, 620–621, 628, 740
 reactivation, 76, 79, 350, 778
 reactivation hypothesis, 332
 reading comprehension, 460
 reading decoding, 229–230
 reading disabilities, 749–750, 820
 reading skill, 110, 202
 reading skills, 229
 reading span (RSPAN), 666
 reading span task, 99, 175, 460, 609
 reading span test, 249, 538
 recall order, 731
 Recall order, 731
 recall protocols, 622, 624
 recall scores, 622, 669, 675, 735
 recency effect, 64, 151, 155
 recognition (receptive dimension), 533
 recursion, 38, 44–45, 397–398
 recursive system, 504
 redintegration processes at retrieval, 146
 redundancy effect, 870–871
 referential arena, 484
 reflexives, 603–604
 regional specificity, 127
 regulation, 228, 462–463, 514
 rehearsal deficit, 447
 rehearsal deficits, 447
 relative clause, 447–448
 relative clause sentences, 448
 relative clause-noun, 306
 relative clauses, 311, 670
 relative position, 344, 350
 reliability reporting, 619, 725–726, 736–737, 740
 reorganization of function, 440, 444
 repetitions, 34, 146, 150, 156, 639, 672
 representational similarity analysis (RSA), 439
 representational systems, 121
 representation-based interference, 349
 research synthesis, 658, 726
 resource-directing, 640–641, 651, 659
 resource-dispersing, 640, 651, 659
 response suppression, 151–152, 154
 response-distractor inhibition, 710
 resting activation levels, 385, 387
 resting level of activation, 371
 retention, 220–221, 228, 429, 450
 retrieval cue, 108, 451
 retrieval fluency, 442
 retrieval structures, 104
 retroactive interference, 105, 151
 reverse order, 293, 325, 423, 723, 728, 731, 822
 reviewing, 515, 517
 revision, 510, 726
 rhyme probe task, 438
 rotation span, 250, 261
 running span, 77, 260–261
- saccade, 124
 salience, 561, 564, 575, 660
 saltationists, 45
 same order, 52, 63, 311, 576, 731
 same-branching, 355
 Sapir-Whorf hypothesis, 175
 schema, 378, 382
 schemas, 87, 110, 135, 372, 377, 701, 703, 794,
 838
 scope of lexical access, 442
 scope of lexical-semantic planning, 441
 scope of phonological planning, 494
 scope of planning, 441
 scoring system, 618, 729
 second language mental lexicon, 636, 639, 651
 second language speaking task performance, 641
 second language speaking tasks, 635
 second language speech production, 636–637
 second language spoken task performance, 638
 secondary loading tasks, 510
 selective interference paradigm, 179
 selective listening, 80–81
 selective-testing fashion, 222
 self-enactment, 841, 846
 semantic buffer, 437
 semantic coding, 63, 144
 semantic complexity, 714
 semantic context, 203
 semantic information, 435, 438
 semantic integration, 130, 133, 461, 509
 semantic interference, 451, 490
 semantic judgment, 732
 semantic judgment and read-aloud used in tandem, 732
 semantic memory, 25, 36–37, 702
 semantic networks, 537–538
 semantic representations, 55, 208, 440
 semantic WM capacity, 438, 444, 452
 semantic WM deficit, 437, 443
 semantic-pragmatic cues, 791
 seminal model, 393, 909–910
 sensitive period, 88, 133, 811
 sensitization, 33
 sensory information, 31, 199, 801
 sensory memory, 81
 sensory store, 79, 85
 sensory-motor neural apparatus, 38
 sentence elaboration, 444–445
 sentence generation task, 509
 sentence level updating, 464
 sentence-generation processes, 505
 separate resources theory, 109
 sequence length effects, 155
 sequencing, 32–33, 149, 161
 serial list recall, 446, 494
 serial order, 156, 556
 set size, 735

- set-oriented calculations (scoring #1-3), 736
 shadowing, 80, 705, 713
 sham stimulation, 488, 845
 shapebuilder task, 531
 shared *index*, 370
 shifting, 199, 374, 711
 short-term memory, 559
 sign codes, 806
 sign-based phonological loop, 807
 signed languages, 807
 similarity-based interference, 350, 359, 596
 Simon Task, 577
 SIMPLE model, 155
 simple processing, 227
 simple reaction time task, 181
 simple span measures, 616
 simple WM tasks, 530, 709
 simultaneous interpreting, 11, 387, 698
 simultaneous learning of content and a second language, 874
 sine qua non, 44
 situation model, 10, 98, 107
 situation model revision task, 464–465, 470
 Skehan's Limited Attentional Capacity
 Hypothesis, 659
 Skilled Memory Theory, 101
 SMG damage, 440
 social models, 12, 803–804
 sociocognitive capacities, 35
 soft constraint, 277
 somatosensory regions, 440
 somatosensory speech monitoring, 131
 sound exchange errors, 441
 sound patterns, 226
 spatial component, 23, 33, 36, 232, 241, 511
 spatial dimensions, 227, 510, 513
 spatial interference, 512
 spatial registers, 507
 spatial-motoric information, 841
 speaking span task, 505
 specialist linguistic systems, 380
 specific language impairment, 52–53, 55
 specific learning disorders, 12, 749–750
 speech comprehension, 698, 706, 712
 speech error analysis, 441
 speech onset, 441, 443, 487–488, 495–496
 speech perception, 438
 speech performance, 659, 661, 685
 speech planning, 482
 speech planning process, 482
 speech rate, 162, 445
 speech recognition, 203, 205, 437
 speech structure, 370
 spelling processes, 510, 516
 split-attention effect, 869
 split-half reliability, 607
 spoken languages, 813
 spontaneous speech, 160
 spontaneous switching, 386
 spreading activation, 86, 350
 SS representations, 374–376, 382–383
 SSARC Model, 640
 stalling, 714
 standard buffer models, 435, 437, 453
 standardized tests, 576–577, 583, 623, 750, 821,
 826
 state-based models, 124
 statistical learning, 10
 statistical regularities, 309, 780
 statistical regularity, 557
 stimulus-onset asynchrony (SOA), 495
 STM for rhythmic patterns, 537
 storage component, 19, 44, 784
 storage subtasks, 249
 storage task, 731
 storage-based scoring methods, 734
 storage-plus-processing memory task, 917
 strictly linguistic systems, 380, 384
 Stroop task, 258–259, 452, 805
 Stroop test, 657, 666, 683
 structural equation model, 58, 200, 207, 253
 structural priming, 658, 670
 adjacency, 278, 281, 288
 subject-extracted relative clauses, 350
 subject-verb-object (SVO) structure, 777
 subjunctive, 44–45
 sublexical features, 135
 subtest, 56, 675–676
 subvocal articulation, 34
 subvocal rehearsals, 21, 24, 34, 79, 145–146, 224,
 440, 445
 superior colliculus, 125
 superior temporal regions, 129–131, 210
 superior temporal sulcus, 129, 440, 453, 456
 supplementary motor area (SMA), 125
 surface form, 102, 107, 190, 778
 surface level, 248, 541, 614
 Surface-syntactic Universal Dependencies (SUD),
 358
 sustained-attention-to-cue task, 259
 switching, 84
 symbol recall, 731
 symbolic thinking, 40
 symbolism, 40
 symmetry span, 250, 261
 synaptic plasticity, 125
 synergetic linguistics, 352
 syntactic accent, 563
 syntactic ambiguity resolution, 594–595, 607
 syntactic analysis, 84, 130, 322, 351
 syntactic complexity, 134, 254, 337, 395, 449, 491
 syntactic comprehension, 782, 785
 syntactic deficit, 447
 syntactic deficits, 781
 syntactic difficulty, 346–347, 350, 359
 syntactic frame, 375, 490
 syntactic growth, 383
 syntactic information, 128, 307, 364, 450,
 615–616
 syntactic interference, 452
 syntactic knowledge, 345, 383, 776
 syntactic learning, 780–781, 786, 791
 syntactic parsing, 113, 363, 614–615
 syntactic persistence, 82
 syntactic planning, 491–493
 syntactic preparation, 516
 syntactic processing, 7
 syntactic representations, 323–324, 385, 782
 syntactic valency, 344, 347
 syntax processor, 375
 target disengagement, 700
 target enhancement, 700
 task adaptivity, 890
 task analysis, 223
 task complexity factors, 640

- task conditions, 643
 task content, 727–728
 task demands, 131, 199, 882
 task difficulty, 260, 534, 575, 689, 758, 868
 task language, 729
 task modality, 729, 738
 task probing productive BOV, 534
 task switching, 666, 677, 762, 918
 task-based learning, 661
 task-unrelated thoughts, 255
 temporal context, 105
 temporal decay, 176, 178
 temporal grouping, 156, 163, 165
 temporal tagging, 32
 test of narrative language, 786
 text (content) planning, 515
 text comprehension, 461
 text representation levels, 541
 textbase, 106, 618, 626
 textbase level, 541
 text-based inferences, 462
that-trace effect, 327, 334
 The Active Filler Hypothesis, 330
 The Capacity Theory of Writing, 505
 the Extended Standard Theory, 338
 The First-Argument Algorithm, 324
 the principle of least effort, 352
 the Serial-Order-in-a-Box (SOB) model, 153
 the Standard Theory, 338
 theoretical phonological similarity matrix, 439
 Theories of Speaking, 646
 Theory of Distributed Associative Memory (TODAM) model, 151
 theory of expertise, 702
 theta oscillations, 378
 think-aloud data, 627
 thought experiments, 37, 45
 three-component model, 20
 time-based limit, 77
 time-based models, 155
 Time-Based Resource Sharing (TBRS) model, 7, 910
 token representations, 153
 top-down processing, 421
 traditional pharmacological interventions, 883
 training dose, 889
 training interval, 889
 training paradigms, 881, 886, 891
 trans-cranial direct current stimulation (tDCS), 488
 transcranial electrical stimulation, 844
 transcranial magnetic stimulation, 136
 transfer effects, 823
 transformational operations, 322
 Transient Information Effect, 872
 transient working memory, 98, 110
 transitional, 556–557, 559
 transition-based dependency parsing, 345
 transitive action, 82
 transitive clauses, 294
 transitive structures, 356
 translating, 232, 504, 517
 translation articulation, 705
 translation processes, 506
 transpositions, 150
 Triadic Model, 640
 tripartite componential working memory model, 551
 tripartite model, 752
 tripartite working memory model, 840
 two-dimensional trees, 343
 type representation, 153
 typically developing (TD) children, 776
 typically developing populations, 882, 896
 unattended channel, 80–81
 unattended speech task, 509
 under language control, 700
 Unified Competition Model, 562
 unitary
 unitary conceptions of working memory, 518
 unitary memory system, 76
 unitary models of working memory, 508
 unitary, 238
 Universal Dependencies (UD), 358
 universal grammar (UG), 380, 394
 update condition, 465, 471
 updating ability, 712
 Updating ability, 710, 712
 updating information, 462–463
 updating task, 476
 updating word span task, 464–465
 uptake, 661, 670, 811
 usage-based grammar, 352
 usage-based perspectives, 786
 utterance quality, 482, 489, 491, 498
 variability effect, 873
 variable-integrated group, 873
 verbal articulation speed, 762
 verbal buffer, 145, 437
 verbal domain, 179, 422, 453, 467, 474–475, 780
 verbal IQ, 423–424, 757, 825
 verbal long-term memory, 20
 verbal recoding, 121
 verbal short-term memory capacity, 777
 verbal storage, 223–224
 verbal WM tasks, 727
 verbal working memory capacity, 338
 verbal-sequential representations, 806
 verbatim representation, 185
 visual cache, 512
 visual component, 36
 visual ELTM, 207
 visual information, 36, 77, 202, 250, 483, 677, 699, 707, 805, 807
 Visual Patterns Test (VPT), 676
 visual speechreading, 202
 visual systems, 370
 visual working memory, 125, 510–512
 visual-spatial sketchpad, 428, 752, 760
 visual-spatial storage, 221, 224
 visual-spatial working memory, 220–221, 225, 227–228, 510
 visuospatial dimension, 511
 visuospatial domain, 422, 428–429, 467, 517
 visuospatial information, 33, 175, 178–179, 422, 676
 visuospatial material, 531
 visuospatial memories, 33
 visuospatial memory, 666, 676
 visuospatial sketchpad, 35
 visuospatial store, 74
 visuospatial task, 178
 vocabulary acquisition, 53–54, 57, 871
 vocabulary knowledge, 10, 54

- vocabulary learning, 52, 57, 60–61, 805, 871
Vocabulary Level Test, 538
vocabulary size test, 468, 531
vocal articulation, 128, 489
waiting, 714
Wernicke's regions, 129
wh dependencies, 329, 331–333, 338
white matter, 123, 133, 140
Wisconsin Card Sorting Task, 577
within memory analysis, 236
within working memory analysis, 236
WM buffers, 10, 435, 439–440, 453
WM capacity, 5, 8, 808, 826
WM measurement practices, 722, 724–725, 741
WM span, 709
WM training, 12, 829
WM-L2 research domain, 736
WM-SLTM interaction, 206
Word Associates Format, 531
word form learning, 537
word grammar, 346, 348–349
word length effect, 21, 157
word order, 310
word recall, 532, 731
word recall tasks, 731
word recognition, 134, 626
wordlikeness, 533
wordlist, 345
word-nonword, 62, 147
words per minute, 445, 672
word-token, 346
Worked Example Effect, 869
working memory deficits, 837
working memory deficits, 837
working memory model, 20
working memory-language nexus, 913, 915, 919
Writer(s)-within-Community model of writing, 525
writing processes, 507
written expression, 231
written modality, 539
written production test, 674
Yes/No Vocabulary Size Test, 531