

Index

- Abbott, I. F.; 108
 aboutness; 20
 A-consciousness; 16, 17
 Addis, D. R.; 92, 233
 affordances; 29, 155, 173
 Aleksander, I.; 54, 88, 89, 229
 amodal features; 3, 38, 39, 76, 106, 125, 221, 226
 amodal perception; 38
 amodal qualia; 3, 38, 39, 51, 77, 78, 198, 226, 228
 analog-to-digital conversion; 76
 Anderson, J. A.; 99, 229
 Aristotle; 99
 Arrabales, R.; 89, 185, 229
 Artificial Intelligence; 1, 27, 93, 96, 189, 191, 230, 231
 artificial neural networks; 27, 91, 93, 95, 98, 100, 102, 108
 associationism; 99, 100
 associative information processing; 98, 100, 163, 167, 174, 221
 attention; 26, 27, 40, 48–52, 54, 58, 60, 62, 65, 81, 89, 97, 111, 127, 131–133, 138, 139, 143, 146, 156, 163–167, 169, 174, 178, 179, 181, 187, 188, 190, 191, 195, 198, 199, 202, 207, 211, 218, 219, 223, 224
 autoassociation; 103, 122, 124, 183
 autoassociative memory; 103, 122, 124, 134, 135, 143, 162
 Baars, B. J.; 4, 52, 185–192, 200, 202, 229, 233
 background feel; 20
 background information; 64, 83
 back-propagation; 27
 Bergson, H.; 99, 229
 Bermejo-Alonso, J.; 92, 232
 blackboard system; 189
 Block, N.; 16, 229
 body image; 45, 46, 48, 85, 86, 88, 90, 149, 173
 BOLD effect; 176
 Boltuc, P.; viii, 17–19, 54, 229
 Botvinick, N.; 45, 229
 Broca area; 182
 Cannon-Bard theory; 57
 Cartesian dualism; 9, 10, 14
 CERA-CRANIUM model; 185
 Chalmers, D. J.; 13, 17, 229
 change blindness; 28
 Chella, A.; 69, 230–232
 chronesthesia; 92
 Churchland, P.; 230
 classification; 27, 28, 91, 95, 180, 184
 cocktail party effect; 49
 Cognition; 91, 96–98, 162, 172, 230–233
 cognitive architecture; 4, 86, 96–98, 122, 125, 151, 170, 173, 184, 185, 196, 204

- cognitive functions; 53, 73, 81, 96, 97, 199, 224
 cognitive prediction; 135
 cognitive recognition; 28
 cognitive science; viii, 2
 Cohen, J.; 45, 229
 color blindness; 34
 comb filtering; 141
 combinatorial explosion; 163, 166
 congenital insensitivity to pain; 85
 ConsScale; x, 89, 90
 content detection; 104, 126, 140
 contents of consciousness; 16, 20, 50, 53, 54, 186–188, 190, 193, 194, 196, 224, 227, 228
 continuity recognition; 28
 Corballis, M. C.; 92, 233
 Corkill, D. D.; 230
 correlative Hebbian; 114, 118
 Crick, F.; 11, 12, 230

 Damasio, A.; 214, 230
 decision-making; 61
 Dennett, D.; 163, 194, 230
 Descartes, R.; 7
 determinism; 61
 distributed signal representations; 3, 106, 109, 126, 138, 158, 161, 167, 174, 181
 dreams; 22, 23
 Duch, W.; 98, 230
 Dunmall, B.; 88, 229

 echoic memory; 139
 echolocation; 140
 emergence; 10, 11, 14, 214
 EMG; 182–184
 emotional evaluation; 64, , 166, 168, 172
 emotional significance; 49, 58, 100, 132, 164–167, 173, 174, 209, 214, 223

 emotions; 3, 5, 53, 55–59, 131, 166, 199, 231
 episodic memory; 193, 195
 Estes, W. K.; 91, 230
 Everett, J.; 66, 232
 explanatory gap, 13–17, 53, 54, 231
 externalist theories of mind; 37
 externalization; 22, 41–46, 139, 157, 158, 162, 167, 173, 221, 222, 227

 feature detector; 40, 94, 105, 106, 115, 126, 127
 feedback control; 91, 98, 158, 159, 162, 210
 filter bank; 26, 142, 143
 fMRI; 176–178, 181, 182, 184
 Fodor, J.; 93, 230
 folk psychology; 15, 66
 formant; 142, 206, 207
 formant filter; 206, 207
 Fourier transform; 26, 142
 fovea; 178, 181
 frame problem; 163, 230
 Franklin, S.; 185, 229, 230
 free will; 11, 60–62, 81
 functional consciousness; 17, 18, 81, 89, 90
 functional pain; 17

 Gamez, D.; 54, 230
 gaze direction; 146, 178, 181
 general intelligence; 93, 96
 Gibson, J. J.; 29, 230
 global workspace; 187–196, 198–202
 Goodman, R.; 92, 231
 Gregory, R. L.; 36, 230
 grounding of meaning; 64, 208

 Haikonen associative neuron; 108–110
 Haikonen cognitive architecture; 98, 170, 196
 hammer test; 84

- hard problem; 13, 14, 17, 228
 Harnad, S.; vii, 18, 19, 54, 82, 230
 Hartley, D.; 99
 Hayes-Roth, B.; 189, 231
 H-consciousness, 17, 18
 HCA; 4, 167–174, 199, 203, 204, 221, 228
 Hebb, D.; 102, 231
 Hebbian learning; 102, 106, 109, 111, 114, 116–118
 Hesslow, G.; 69, 92, 193, 231
 heteroassociation; 103, 183
 Hinton, G. E.; 105, 231
 Holland, O.; 92, 229, 231, 233
 homunculus; 9, 188, 192
 Hume, D. A.; 53, 99, 231
- identity theory; 11, 12, 14
 imagination; 9, 29, 47, 65, 67, 89, 103, 104, 106, 136–138, 145, 148, 166, 169, 172, 176, 196, 199, 222, 223
 immaterial mind; 7–9, 60
 information integration; 4, 16, 37, 51, 52, 54, 155, 167, 172, 173, 194, 199, 228
 inner attention; 50
 inner imagery; 68, 84, 127, 167, 174–180, 182
 inner speech; 3, 15, 20, 21, 52, 66–72, 84, 139, 152, 167, 172, 174, 182, 184, 186, 188, 197–199, 202, 206, 227
 instrument appearance; 21, 22, 24
 integrate and fire model; 107
 intentionality; 20
 internal appearance; 20–24, 41, 52–54, 73, 78, 79, 84, 158, 196, 222, 225, 226, 227
 introspection; 9, 69, 70, 81, 86, 127, 129, 136–139, 145, 168, 188, 199, 223
 introspective perception; 125
- Jackson, F.; 32, 231
 Jain, A. K.; 102, 231
 Jorgensen, C.; 231
- Kanerva, P.; 105, 231
 kinesthetic; 67
 Kinouchi, Y.; 185, 231
 Knight, R.; 92, 231
 Koch, Ch.; 12, 83, 230, 231
- Lapique, L.; 108, 229
 Law of Qualities; 36, 37, 39
 Ledezma, A.; 89, 185, 229
 LeDoux, J.; 57, 231
 Lesser, E.; 184, 231
 Levine, J.; 13, 231
 Lewis, M.; 87, 231
 LIDA model; 185, 229
 lingua franca; 190, 194
 locked-in syndrome; 175
 long-term memory; 64
- machine cognition; 203
 Malsburg von der, C.; 52, 232
 Manzotti, R.; 37, 231, 232
 Mao, J.; 231
 Marchetti, G.; 65, 232
 Mary argument; 32
 Maslin, K.; 12, 232
 Massimi, M.; 52, 232
 match condition; 130, 131
 match/mismatch/novelty; 109, 127, 167, 168, 174
 materialist theory; 10
 Mavridis, N.; 66, 232
 McClelland, J. L.; 105, 231
 meaning; 18, 20, 25, 29, 31, 49, 51, 64, 66, 77, 94, 103, 104, 106, 109, 111, 115, 126, 137, 140, 151–154, 195, 208, 219, 226
 memories; 5, 29, 50, 52, 85, 87, 91, 99, 100, 102, 105, 106, 123, 124, 134,

- 135, 141, 146, 149, 173, 181, 186,
192, 198, 223
- memory making; 51, 53, 195, 199
- mental content; 7, 8, 11, 12, 14, 21, 69,
73, 80, 84, 86, 125, 127, 175, 177,
179, 197, 202, 222, 223, 226, 227
- mental self-image; 85, 86, 88, 90
- mind; 2, 4–14, 16, 20, 21, 25, 30, 37,
46, 47, 50, 56, 60, 66, 73, 77, 80,
82, 87, 91–93, 101, 104, 164, 176,
182, 186, 188, 192, 197, 233
- mind reading; 4, 176, 182
- mind-body problem; 2, 13, 14, 30
- mirror test; 86, 90
- mismatch; 27, 58, 109, 127, 129, 130,
131, 134, 135, 138, 145, 154, 162,
167, 168, 174
- Miyawaki, Y.; 178, 232
- Mohiuddin, K. M.; 231
- Morin, A.; 66, 232
- motivation; 50, 59, 172, 213, 222, 223
- motivational factors; 59, 214
- motor control; 39, 160, 161, 162, 206
- multimodal model of language; 64, 219
- Müller, J.; 36
- Nagel, T.; 38, 232
- Nairne, J. S.; 50, 232
- name test; 87, 90
- natural language; 28, 63, 64, 66, 67, 84,
87, 88, 94, 151, 152, 167, 171, 174,
197, 204, 206, 218, 219, 223
- Naselaris, T.; 178, 232
- neural correlates of consciousness; 12
- neural networks, 3, 27, 91, 93, 95–98,
100, 102, 108, 117, 167, 174, 231
- neuron group; 13, 71, 97, 119–124,
128–137, 142, 143, 149, 153, 154,
156, 160–165, 170, 171, 190, 207,
223, 228
- neuron models; 107, 108
- Newcombe, R.; 92, 231
- Nii, H. P.; 189, 232
- Nishimoto, S.; 178, 232
- nociception, 85
- novelty condition; 27, 127, 130, 131,
145
- ostension; 152
- own will; 60, 62
- pain; 40, 41, 58, 59, 79, 164–166, 171,
172, 212–214, 220, 223, 226, 228
- paresthesia; 85
- pattern recognition; 27, 104, 188
- Pavlov, I.; 100, 101, 232
- Pavlovian conditioning, 101–103, 106,
109
- P-consciousness; 16, 17
- Pearson, K.; 91, 232
- perception process; 26, 27, 29, 47, 48,
69, 72, 74, 77–80, 105, 125–129,
136, 167–169, 174, 221, 222, 227,
228
- perception/response feedback loop;
128–151, 157–162, 164, 165,
169–171, 176, 179–184, 198, 199,
206, 208–212, 221, 223, 224
- phenomenal awareness; 84
- phonemes; 123, 124, 141, 142, 183,
184
- PID controller; 159
- pitch; 141, 207
- pixel map; 104, 131, 133, 146
- Plato; 7
- pleasure; 13, 15, 21, 30, 40, 50, 51, 53,
58, 59, 164–166, 171, 172, 204,
212–214, 220, 223
- prediction; 92, 103, 127, 128, 131, 134,
135, 137–139, 143, 162
- priming; 129, 130, 132, 133, 138, 143,
212
- property dualism; 10–12
- proprioception; 85, 149, 160, 161

- qualia; 3, 30–41, 45–54, 57, 58, 67–69, 73–84, 90, 94–96, 106, 109, 125, 144, 150, 151, 167, 175, 186, 190, 195–198, 202, 221, 222, 226–228, 231
- Radvansky, G. A.; 65, 233
- Ramamurthy, U.; 229
- reasoning; 5, 9, 14, 60, 151, 188, 219, 226
- recognition; 27, 28, 30, 87, 104, 105, 129, 139, 141, 184, 187, 188, 204, 207, 230
- reportability; 51–53, 191, 198, 202, 227
- robot brains; 96, 197
- rouge test; 86
- Roy, D.; 66, 232
- rubber hand experiment; 45
- Rumelhart, D. E., 105, 231
- Samsonovich, A. V.; 98, 230, 232
- Sanchis, A.; 89, 185, 229
- Sanz, R.; 91, 232
- Schaeps, T.; 231
- Scherzer, P.; 18, 19, 54, 231
- self-awareness; 66, 91, 232
- self-concept; 86, 87, 90, 214, 222, 223
- self-consciousness; 62, 67, 86–88, 90, 92, 96, 214, 232
- self-image; 85, 86, 88, 90
- self-talk; 66, 203, 204, 206, 218, 219, 222, 223
- sensorimotor integration; 4, 39, 78, 157, 158, 162, 197, 203, 223, 228
- sensorimotor loop; 193–196
- sensory attention; 49, 132, 146
- sensory modalities; 28, 35, 38, 45, 64, 69, 72, 75, 80, 85, 125, 129, 136, 149, 172, 174, 224
- Shanahan, M.; 4, 52, 173, 185, 189, 191–196, 200–202, 233
- Shanahan architecture; 192
- short-term memory; 54, 64, 127
- signal vectors; 121–123
- significance; 49, 58, 62, 100, 133, 164–167, 173, 174, 208, 209, 214, 223
- situation awareness; 16, 17, 20, 53, 79, 92, 222, 228
- situation models; 64, 65
- Sloman, A.; 2, 233
- somatosensory system; 85, 86, 223
- Sommerhof, G.; 65, 233
- soul; 7, 10
- sound direction detection; 44, 211
- sound segregation; 140
- spectrum analysis; 71, 141, 142
- speech recognition; 28, 184, 204
- spiking neurons; 108
- SRTE; 58, 59, 199
- Steels, L.; 66, 233
- subjective experience; 6–24, 30, 36, 50, 53, 54, 67, 80, 96, 151, 157, 202, 226
- subjective feel; 13, 56, 62
- sub-set interference; 120
- sub-symbolic representations; 93–95, 151, 224
- Suddendorf, T.; 92, 233
- supervenient phenomenon; 10
- surface electromyography; 182, 184
- symbolic representations; 22, 48, 74, 77, 80, 93–95, 151, 175, 176, 224
- synapse; 97, 110, 111, 114, 116
- synaptic switch; 110, 111
- synaptic weight; 95, 110, 111, 114, 116, 117, 120, 121
- synesthesia; 35
- syntax; 63, 64, 152
- system reactions; 39, 40, 51, 58, 164, 166, 172, 212, 214
- system reactions theory of emotions; 58
- tactition; 85
- Tagliasco, V.; 37, 232

- Takeo, J.; 87, 233
theater model; 188, 191, 192, 196, 199
Tononi, G.; 37, 52, 83, 173, 194, 229,
231, 232, 233
Total Turing Test; 82, 83
touch perception; 148, 149
Turing, A. M.; 82, 233
Turing Test, 82, 83
- visual attention; 156, 178, 181, 195
vowel; 142, 207
- Wand, M.; 182, 233
Winner-Takes-All; 112, 113, 121, 129,
183
working memory; 49, 50, 129,
187–193, 200
- XCR-1; 4, 66, 80 203–224, 230
- Zwaan, R.; 65, 233