

Index

- Ahn, Woo-Kyoung, 66
 alternative causes, 16, 75, 76
 analogical reasoning, 51–53
 autism, 54
 definition, 49
 Duncker X-ray problem, 52
 financial crisis of 2008, 106–109
 insight, 56
 neural networks, 54–56
 novice vs expert, 54, 149
 philosophical theories, 221–223
 problem structure similarity, 223
 psychological theories, 223–227
 relational mindset, 58
 reminders, 54
 surface feature similarity, 53
 US–China Cold War, 50–51
 analogy
 definition, 49
 anti-vaxxer, 82
 Axelrod, Robert, 132, 291
- Bacon, Sir Francis, 70, 238
Bayesian (Rational) Decision-Making
 definition, 262
 Bernanke, Ben, 48
 biases
 belief bias, 11–13
 biases, types of
 confirmation bias, 69,
 70–71
 confirmation bias explanation, 73–74
 decoy effect, 99
 Einstellung, 158
 framing effect, 95
 inequity aversion, 126
 loss aversion, 95
 overconfidence, 103
 plausibility bias, 68
 representativeness, 93
 Bloom, Paul
 against empathy, 28–30
 against empathy criticism, 30–32
 Bounded Rationality, 100
- cancer screening
 breast cancer, 89–90
 prostate cancer, 90–91
 causal judgment
 mechanism vs covariation, 66–68
 causal power theories, 67
 causal sufficiency, 234
 causality
 causal necessity, 234
 David Hume, 232–233
 David Lewis, 235
 generative causal mechanism, 66
 Immanuel Kant, 233–234
 John Stuart Mill's *Canons*, 236
 Mackie's INUS condition, 236
 not directly perceivable, 63
 Chater, Nick, 74
 Cheng, Patricia, 256
 collectivism
 definition, 37, 217
 consequentialism
 definition, 23
 Costly Signaling Theory
 definition, 136
 COVID-19, xvi, 81, 82, 84, 85

- Decety, Jean, 33
- decision-making
- Bayes Rule applied to breast cancer screening, 266–273
 - Bayes Rules applied to prostate cancer screening, 273–274
 - Bayes, posterior probability, 262
 - Bayesian hypothesis testing vs statistical significance hypothesis testing, 274
 - Bayesian, overview, 264–265
 - false-positive vs false-negative test result**, 270
 - how to improve, 110–114
 - prevalence vs incidence, 271
 - sensitivity vs specificity of a test, 269
- deontology
- definition, 23
- Dictator Game
- definition, 124
 - how people behave, 124
- dietary fat vs carbs, 76–80. *See* plausibility bias
- disablers, 16, 75, 76, 331
- Duncker, Karl, 52, 144
- echo chambers, xvi
- Ekman, Paul, 5
- emotion
- impact on decision-making, 105–106
- empathy
- affective, 29
 - avoiding, 35–36
 - cognitive, 29
 - definition, 28
 - ways to improve, 34–35
- enlightenment era*, xxi, 31, 35, 199, 200
- evolution of cooperation, 132–135
- Evolutionarily Stable Strategy (ESS), 134
 - kin selection, 133
 - reciprocal altruism, 134
- fake news, xv
- fallacies
- conjunction fallacy, 94
- Fallacy, 3
- fallacy, types of**, 9
- ad hominem**, 3
 - false dichotomy, 9
 - genetic, 10
 - moral equivalence**, 9
 - red herring**, 9
 - slippery slope, 10
 - straw man, 10
- fast and slow decision-making, 102–104
- fast and slow thinking, 13–14
- filter bubbles, xvi
- financial crisis of 2008, 106–109
- Foot, Phillipa, 21
- function
- definition, 170
- game
- definition, 116
- game theory
- Battle of the Sexes game, 286
 - best response**, 117, 285
 - constant-sum game**, 283
 - cooperative vs non-cooperative games**, 284
 - definition, 282
 - Dictator and Ultimatum games, 297–298
 - equilibrium, 117, 286
 - extensive form payoff tree, 288
 - game, definition, 282
 - how to improve negotiations, 142–143
 - impact of power and status differences, 127
 - impact of symmetric and asymmetric information, 126–127
 - investment game, 296–297
 - Matching Pennies game**, 289
 - neuroscience studies, 135–137
 - noblesse oblige*, 127–132
 - normal form payoff matrix**, 287
 - overview, 116–117
 - perfect vs imperfect information, 280, 288
 - Prisoner's Dilemma, 290–295
 - proportional prize game, 284
 - Public Goods Game, 295–296
 - pure Nash equilibrium, 286
 - pure vs mixed strategy**, 288
 - rational agent, definition, 282
 - simultaneous vs sequential game, 283
 - Ultimatum and Dictator games, 297–298
 - variable-sum game**, 284
 - winner take all game**, 284
 - zero-sum game, 284
- genocide, 31
- Gentner, Dedre, 223, 225
- Gigerenzer, Gerd, 89, 110
- Gilligan, Carol, 44
- theory of moral development, 44–45
- Gopnik, Alison, 74
- Greene, Joshua, 24
- Haidt, Jonathan, xvi, 28
- Hamilton, William, 132, 133

- Hofstadter, Douglas, 51
 Holyoak, Keith, 51, 226, 227
 hypothesis testing
 alpha probability, 250
 Beta probability, 251
 central tendency, 248
 correlation, 252
 David Hume “black swan”, 239
 effect size, 253
 experimental design, 254–256
 false negative, 251
 false positive, 249
 hypothetico-deductive method, 238
 Karl Popper falsificationist strategy, 239
 null hypothesis vs alternative hypothesis, 244
 one-tailed test, 250
 p-hacking, 232, 254
 Power PC Theory, 256
 sampling distribution of the mean, 248
 single-blind vs double-blind study, 245
 standard deviation, 232, 249
 Thomas Kuhn and revolutionary science, 240–243
 two-tailed test, 250
 Type I error, 247
 Type II error, 247
 hypothesis testing
 Sir Francis Bacon, 238
 hypothetico-deductive method of scientific inquiry
 definition, 71
 overview, 71–73
- identity politics, xix, xx
 immunity
 herd, 83
 natural, 83
 vaccine, 83
 individualism
 definition, 37
 Infant Cognition
 causality, 64–65
 ingroup bias, xvii, xviii
 social cognition, 131–132
 tabula rasa, 138–139
 Ingroup bias, 32–33. *See* Biases
 ingroup favoritism
 definition, 32
 intuitive logic, 14
- Jefferson, Thomas, 199
- Kahneman, Daniel, 13, 27, 93, 102, 298
 Kant, Immanuel, 23, 200, 203, 216, 219, 233
 Kohlberg, Lawrence, 42
 six-stage theory of moral development, 42–44
- lie detection, 5
 Locke, John, 199, 201, 233
 logic
 argument, 176
 argument soundness, 178
 Aristotelian, 171–175
 categorical syllogism, 168, 172
 causal, 189
 deductive validity, 172
 deontic, 189–190
 first order, 184–186
 inductive argument, 178
 inference, 177
 modal, 187–188
 overview, 6–9, 170–171
 propositional, 175–178
 truth functional, 178–184
- metaphor, 49–52, 58–60
 Mill, John Stuart, 200, 208, 216,
 236, 349
 minimal group paradigm, 32
 moral dumbfounding, 21
 Moral Foundations Theory, 39
 moral judgment, 20
 Aristotle, 198
 brain damage, 26–27
 Buddhism, 211
 categorical imperative, 205
 Confucianism, 211
 consequentialism, 209
 David Hume, 201–202
 deontology, definition, 203
 doctrine of doing and allowing, 207
 doctrine of double effect, 207
 eudaimonia, 198
 gender differences, 41–45
 Hinduism, 213
 history of, in western cultures, 198–200
 hypothetical imperative, 205
 Immanuel Kant, 203–208
 impact of political orientation, 40
 impact of relational mobility, 39
 Islam, 214
 Jeremy Bentham, 208–210
 John Stuart Mill, 208–210
 moral dilemma, 197
 moral imperative, 197
 moral rules, 20

- neuroscience, 24–27
 psychopaths, 26
 religion, 38
 theocracy, 198
 time constraints, 27
 transcranial magnetic stimulation, 27
 universal moral principles, 215
 universal vs culture specific, 36–38
utilitarianism, 209
 Moral Machine Project, 36
 moral philosophy
 definition, 200
 moral rules
 definition, 20
 Neural networks, 151, 152, 153, 319, 320, 321
noblesse oblige
 definition, 128
 Novick, Laura, 256
 nudging
 definition, 113
 negative impact on behavior, 113
 positive impact on behavior, 113
 Oaksford, Mike, 74
 Oliner, Samuel, 32
 outgroup derogation
 definition, 32
 perception gap, xx
 Pinker, Steven, 6, 35, 330
 polio vaccine, 80–82
 Pollock, John, 16, 190
 Popper, Karl, 69, 230, 239
 Prestige Status Striving
 definition, 136
 Prisoner's Dilemma
 how people actually behave, 120–121
 overview, 118–120
 problem-solving
algorithm, 304
algorithm, solution, 305
 artificial intelligence, 150–153
 beam-search algorithm, 316
 best first-search algorithm, 316
 breadth-first vs depth-first search, 312
 definition, 145
evaluation function, 314
 expert problem-solving, 147–150
 forward vs backward chaining, 314
genetic search algorithm, 316
 hill climbing search algorithm, 315
 how to improve, 162
 ill-defined problems, 309–311
 insight and creativity, 153–160
 means ends analysis, 145
 neural networks, 319–322
 overview, 144–147
 production systems, 317–318
 random search algorithms, 317
 recursion, natural language, 307
 recursive function, 305
 simulated annealing search algorithm,
 316
 Tower of Hanoi problem, 306
 uninformed vs informed search, 311
well-defined problems, 304–309
 Prospect Theory, 97, 276, 340
 Public Goods Game
 definition, 121
 free riding, 121
 how people behave, 122–123
 Rand, Ayn, 137–141
 rational agent, 116
 Rational Choice Theory, 91, 276
 completeness, 98
 opportunity cost, 100
 transitivity, 98
 reasoning
 defeasible, 190–191
 monotonic vs non-monotonic, 190
 practical vs theoretical, 169–170
 Salk, Jonas. *See* polio vaccine
 self-driving cars, 19
 slavery, 31
 social convention
 definition, 21
 Social Intuitionist Theory, 28, 219
 social norms
 definition, 120
 soundness, argument, 9
 standpoint epistemology, xix
 System 1. *See* fast and slow thinking
 System 2. *See* fast and slow thinking
 Thagard, Paul, 51, 226
 Thaler, Richard, 113, 298, 342
 Thomson, Judith Jarvis, 21
 Tit For Tat
 definition, 119
 tribalism, xx
 Trivers, Robert, 134, 293

- trolley problem
 philosophical treatments, 21–23
- Trustee Game
 definition, 123
 how people behave, 123
- truth function. *See* validity, argument
- Tversky, Amos, 93, 95, 97, 340, 341
- Ultimatum Game
 definition, 124
- how people behave,
 124–126
- utility
 definition, 98
 neuroscience, 103
- validity, argument, 7–8
- Wason, Peter, 68
 2-4-6 task, 68–69