

Index

- adaptationism, 56
adaptive landscape, 89, 140, 144, 166
adaptive plasticity, see phenotypic variability
adaptive target, 141
acquaintance, knowledge by, 220

beaver tail slaps, 119, 121, 137, 204
bee dance, 120
belief/desire distinction, 201, 225
bits, 114, 115
Bateson, Gregory, 115
Blackmore, Susan, 66
Brodie, Richard, 65
bumblebee model, 164–180

Campbell, Donald T., 4, 33, 47, 72, 85, 94,
 151, 165, 169
cellular ontology, 54–57
Chalmers, David, 115
Churchland, Pat, 223
cheater detection, 209
co-adaptation, 197, 198, 200
common knowledge, 196
common sense, 4, 159–161, 163
comprehension, 213
computer modeling, see modeling, computer
consciousness, 42–43, 44
content, 194
 primitive, see primitive content
conventions, 194, 195, 200, 203, 211, 231,
 232–233
 enforcement of, 206, 207, 208, 209, 214
 formalization of, 203–204, 208
 normativity of, 204, 233
 result of selection, 196
cooperation, evolution of, 100–102

copying, 19, 23, 49, 55, 64
 error, 21, 23
correspondence, 64, 200, 203, 204, 205, 206,
 207, 208, 232, 237
cultural evolution, 8, 50, 151, 234
 adaptive, 64
 defined, 64
cultural vs. genetic determinism, 44, 150, 219,
 231, 240
 requires replicators, 28, 31, 40, 41, 48, 65, 82
curiosity, 171

Darwall, *et al.*, 221
Darwin, Charles, 17
Dawkins, Richard, 8, 16–28, 49, 64
demes, 106
 in science, 35–38
Dennett, Daniel, 8, 64, 72
development, 54, 57
discreteness
 of genetic code, 21, 23, 24, 49
 of memetic code, 25, 26, 131
disjunctive referents, 117, 199, 204
dispositions, 39, 61, 62–63, 83, 148
 higher-order, 62
Dobzhansky, T., 17
Dretske, Fred, 109, 116–118, 135, 201
drift, see sampling error

E. Coli, 153, 206
empiricism, 135
 ahistorical bias, 5, 6, 201, 229, 230
epistemology, 3–4, 189
 evolutionary, 4–6, 40, 59, 85, 185, 186
 naturalistic, 4–6, 189
 problem of, 133–138, 162, 182, 183, 184

Index

- error detectors, see success indicators
 evolution
 cultural, see cultural evolution
 defined, 29, 47, 71
 standard introduction, 81
 transformative, 73
 exaptation, of success indicators, 173, 181
 extension, 1, 193, 204, 212, 226
 extinction, 107
 fertilization, 57
 Fisher's Fundamental Theorem, 36, 142
 fission, 55
 fitness
 conceptual inclusive, 33–35
 defined, 88, 91, 92
 frequency-dependent, 99
 inclusive, 34
 mean, 89
 fitness feedback loop, 85, 164, 184
 foundationalism, 5
 functions, biological, 117
 function-stabilizing mechanisms, 202
 gap
 is/ought, 6, 190, 219, 224, 225, 227
 Kantian, 134, 140, 147, 162, 183, 184
 game theory, evolutionary, 9, 73, 75, 86, 195, 196
 gene, “sliding definition” of, 21, 24, 25, 41, 45, 46, 49, 53
 genetic algorithm, 85
 Gettier, Edmund, 210
 Godfrey-Smith, Peter, 109, 118, 121
 gradualism, 17, 20, 71
 Hamilton, William D., 34, 207
 Heylighen, Francis, 64
 historical relations, 7, 192, 197, 200, 219, 230, 231
 Holland, John, 85
 homeostatic mechanisms, 60–61
 Horgan, Terry, 236
 Hull, David, 8, 28–41, 106
 Hume, David, 5, 6, 9, 10–12, 160, 211, 219, 228–231
 hunger, 205
 identity conditions
 of gene, 18, 41
 of memes, 24, 26, 45, 46, 49
 of replicator, 20, 39
 imitation, 24, 63, 83
 information, 25, 45, 60, 129, 154, 158
 additivity requirement, 113
 as “difference that makes a difference,” 115
 channel conditions, 117
 current mutual, 112
 entropy, 110, 185
 equivocation, 112, 116
 exploitability of, 146, 147, 158, 174, 175, 180, 233
 individual level, 146
 instructional, 131
 mutual, 112, 114, 115, 118, 122, 131, 143, 147, 173, 185
 population level, 145
 rate of transmission, 111
 self-, 110
 semantic, 116, 117, 130, 132
 spaces, 115, 131
 structural, 131, 162
 symmetry of, 112
 utility of, 123, 124, 126–129, 148
 innate traits, 152, 160, 161, 168, 215
 intension, 194, 211
 intentionality, 193
 intentional icon, 199
 intentional properties, 43, 45, 46, 194
 intentional stance, the, 45–46, 50
 interactor, 29, 30–31, 33, 40
 internal states, 164
 intuitions, 210–211, 212–213, 220, 221, 234
 authority of, 7, 190, 209, 235
 conflicts, 237, 238, 239, 240
 meaning of, 192, 205, 214, 235
 Jackson, Frank, 223
 justification, 4, 120, 204, 211
 Kim, Jaegwon, 6, 235
 Kuhn, Thomas, 2
 Lamarckian inheritance, 26, 70
 learning, 150, 165
 conservativeness in, 172, 177
 in populations, 138, 180
 trial-and-error, 84, 151, 160, 185
 Leibniz, Gottfried Wilhelm, 10
 Lewis, David, 195
 Lewontin, Richard, 47

Index

- lineage, 30, 39
 - defined, 29
- logarithm, 114
- logic, 213
- Mary problem, 223
- meaning, 4, 7, 195, 196, 197, 200
- meme, 23–28, 32
 - meme's-eye view, 44, 64, 66, 67, 75
 - memetics, 59, 64–67, 75, 231
- memory, 160
- Millikan, Ruth, 9, 118, 191, 194, 197–198, 200, 212, 214
- misrepresentation, 117, 120
- modeling, 102, 185
 - arbitrary parameter values, 173
 - in evolutionary theory, 17
 - computer, 9, 85–86, 145, 165
 - vectors, 87
- Moore, G.E., 7, 9, 161, 219
- motivation, direct, 191, 201
- mutation, 95–99, 104, 108, 171
 - matrix, 99
 - selection-driven, 97, 168
 - uniform random, 95, 145
- naturalistic fallacy, 220
- normalization, 89, 91, 104, 171
- normative theory, 6, 190, 225
- norms
 - ethical, 4, 5, 191, 209, 210, 219
 - epistemological, 4, 5, 189, 190
 - incommensurability, 190, 227, 238
 - participation in, 225, 226, 237
- ontological neutrality, 114, 119, 132, 136, 141, 147, 181, 183, 185, 203
- open-question argument, 9, 220, 227
- partition, 143
 - by behavioral options, 119, 204
- phase portrait, 88
- phenotypic variability, 62, 153, 162, 172, 185
- physics, analogy with, 74
- population genetics, 9, 73, 86
- populations, 86, 94, 174
 - defined, 87
 - effectively infinite, 36, 105–107
 - evolution of, 73
 - fixed-size, 104
- practices, transmission of, 32, 39
- preferences, 169
- primitive content, 201, 202, 214, 216, 218, 225, 233
 - and antinaturalism, 222, 230, 234
 - directly motivating, 205
 - in regulatory hierarchies, 211, 215
 - limits of, 237
 - formalized, 203–204
 - nonpropositional, 201
- prisoner's dilemma, 101, 142, 207
- propositions, 7, 191, 201, 205, 214, 215, 218, 234, 235
- Quine, W.V.O., 5, 189, 201
- random walks, 154, 164, 168, 174
- Real, Leslie A., 164
- reciprocal altruism, 207
- recombination, 57
- regulatory hierarchy, 206, 207, 209, 211, 214
- relativism, 7, 28, 36, 38, 228
 - epistemological, 1, 135
- reliability, 120, 122, 130, 215
 - of senses, 4, 151, 183, 233
- replication, 54
 - self-, 8, 19, 47, 55, 56
 - see also copying
- replicator
 - active/passive, 19
 - definition of, 18–23, 29
 - germ-line, 19
 - generality of, 22
 - longevity of, 20
 - summary of properties, 23
 - test of mutilation, 21–22
 - see also gene
- replicator dynamics, 15, 87–89, 171, 185
- representations
 - consumption of, 119
- Rorty, Richard, 3
- Rosenberg, Alex, 39
- rules, see conventions
- sampling error, 36, 68, 136, 140, 145
- selection, 4, 31, 88, 91, 93, 136
 - defined, 29, 89
 - levels of, 29
 - local vs. genetic, 155
 - multilevel, 149, 151, 165, 169, 185
 - units of, 17, 20, 29, 53

Index

- selection vs. variation
 - causal criterion, 93
 - mathematical criterion, 93–94
- Selfish Gene, The*, 16–17
- selfishness, 44, 47, 49, 54, 65, 68–72
 - self-beneficial, 68, 69
 - economic, 68, 69–70
 - accumulation of traits, 68
- Shannon, Claude, 109, 113
- signaling system, 195
- sociobiology, 66, 161
- stability, 18, 81, 136, 139
- stimulus meaning, 199
- success indicators, 84, 151, 158, 159, 160, 161, 163
- supervenience, 50, 235–237
- simplex, 87
- skepticism, 135
- Skyrms, Brian, 9, 107, 195
- Sober, Elliott, 106
 - and D.S.Wilson, 53, 69–70
- structure, transmission of, 30
- symmetry breaking, 196
- tautology problem, 68
- teleosemantics, 109, 194
 - alternative foundations, 215–216, 233
 - formalization of, 203–204, 236
 - see also primitive content
- Tit-for-Tat, 101
- tracking efficiency, 109, 112, 120–122, 185
- translation, 226, 227
- transmission, cultural, 8, 55, 62, 63
 - see also evolution, cultural
- triangulation, 134
- Trivers, Robert, 207
- truth, 4, 163, 211
 - see also correspondence
 - and information transfer, 91, 127, 140, 144–145, 146, 183
- type-token distinction, 18, 30, 41
- type scheme, imposition of, 139, 183
- uncertainty, 110, 113
- variation, 92, 93, 97, 145, 180
 - biased, 169
 - rate of, 23, 70, 97, 177
- vehicles, 33
- vervet monkeys, 198, 200, 226, 238
- vicarious selectors, 84, 151, 152, 184
 - see also success indicators
- warning cries, 7, 200
- Waddington, C.H., 160
- Wiener, Norbert, 113
- Williams, George C., 21
- Wilson, E.O., 161
- Wittgenstein, Ludwig, 216
- word, as unit of meaning, 192, 201, 212, 214, 215, 217, 226
- Wright, Sewall, 36, 89, 106