

Author Index

- 't Hooft, Gerardus, 33
- Adams, Fred, 25–26
 Adams, Robert M., 171
 Adlam, Emily, 163
 Armstrong, David M., 170–171
 Arntzenius, Frank, 124
- Baker, David J., 160
 Barnes, Luke A., 24, 42, 44
 Behe, Michael, 38
 Bertrand, Joseph, 104
 Boltzmann, Ludwig, 122
 Bostrom, Nick, 16, 30, 54, 69, 99–100, 107–110,
 134–135, 137–139, 141, 151
 Bradley, Darren, 53, 55–58, 80–82, 136, 143–147
 Briggs, Rachel, 150
- Carlson, Erik, 30, 62
 Carroll, Sean M., 17, 19, 97, 122, 160, 162–168,
 172
 Carter, Brandon, 15, 40–41, 85–90
 Colbeck, Roger, 183
 Collins, Robin, 42, 47
- Dawid, Richard, xi, 9, 160, 163
 Dembski, William, 38
 Deutsch, David, 160, 162
 Dicke, Robert, 15, 85–90
 Dieks, Dennis, 139–140, 143, 145–146
 Dirac, Paul A. M., 86
 Dizadji-Bahmani, Foad, 161
 Dorr, Cian, 124
- Eckhardt, William, 137
 Eddington, Arthur, 122
 Ellis, George F. R., 10
 Einstein, Albert, 26
- Elga, Adam, 99, 103–104, 109,
 145–146, 164
 Epstein, Peter Fisher, 57–58, 80–81
- Fitelson, Branden, 48
 Forrest, Peter, 170–171
- Garber, Daniel, 48
 Garriga, Jaume, 105, 106, 109–110
 Gould, Stephen J., 62
 Greene, Brian, 53, 98
 Grinbaum, Alexei, 32
 Guth, Alan, 5, 79, 119–120
- Hacking, Ian, 54
 Harlander, Robert, 32
 Hartle, Jim B., 16, 99, 100, 105–109, 111
 Hartmann, Stephan, xii, 9, 48
 Healey, Richard A., 157, 183
 Hitchcock, Christopher, 150
 Hossenfelder, Sabine, 181
 Howson, Colin, 42
- Ijjas, Anna, 11–12, 120
- Juhl, Cory, 57, 72–73, 75–78
- Kent, Adrian, 160
 Keynes, John M., 45, 103
 Knight, Frank, 103
 Kotzen, Matthew, 41–42
 Kripke, Saul, 168–169
- Landsman, Klaas, 54–57
 Legwater, Gijs, 183
 Leslie, John, 30, 41, 53, 54,
 86, 136
 Lewis, David, 13, 17–19, 146,
 155, 168–173, 177

198

Lewis, Geraint, 44
 Lewis, Peter, 136, 143, 144
 Linde, Andrei, 127
 Loeb, Avi, 11–12, 120

Manson, Neil A., 30, 44, 46–61
 McCoy, Casey, 8
 McGrath, Patrick J., 54
 McKenzie, Kerry, 184
 McQueen, Kevin J., 161, 167
 Miller, Kenneth R., 38
 Monton, Bradley, 29, 42–43, 48

Narveson, Jan, 46–47
 Neal, Radford M., 137
 Norton, John D., 104, 120, 138–139

Olsson, Erik J., 30, 62
 Olum, Ken, 106, 139

Page, Don N., 123
 Parfit, Derek, 53
 Penrose, Roger, 23
 Pisaturo, Ronald, 136

Renner, Renato, 183
 Roberts, John T., 48
 Rosaler, Joshua, 32
 Rota, Michael, 44

Saunders, Simon, 160, 162
 Schlesinger, George, 171
 Sebens, Charles T., 17, 19, 160, 162–168, 172
 Shackel, Nicholas, 104
 Smart, J. J. C., 53, 171
 Smeenk, Christopher, 79, 127
 Smolin, Lee, 63

Author Index

Sober, Elliott, 39, 41–42, 46
 Sprenger, Jan, 9, 48
 Srednicki, Mark, 16, 99, 100, 105–109
 Starkman, Glenn D., 118
 Steinhardt, Paul J., 11–12, 99, 119, 120
 Stenger, Victor J., 24
 Susskind, Leonard, 53
 Swinburne, Richard, 45

Tegmark, Max, 13, 17, 19, 22,
 53, 75, 102, 119, 124,
 127, 155, 173–177
 Thébault, Karim, 160, 163
 Thomas, Holly, 171
 Thrush, Michael J., 30, 54,
 57, 61
 Trotta, Roberto, 118

Vaidman, Lev, 160–161,
 167, 168
 van Fraassen, Bas, 104
 van Inwagen, Peter, 30
 Venn, John, 45
 Vilenkin, Alexander, 99, 105, 106, 109–110, 119

Wallace, David, 157, 158, 160, 162
 Weatherson, Brian, 103, 104
 Weinberg, Steven, 99, 102
 Weisberg, Jonathan, 41–42, 48, 49
 Wells, James, 33
 Wetterich, Christof, xi, 32
 White, Roger, 48–49
 Wilson, Alistair, 143
 Woit, Peter, 178–179

Zuboff, Arnold, 145
 Zurek, Wojciech, H., 160, 165

Subject Index

- Adam and Eve puzzles (Bostrom), 16, 134–137, 139, 151
- admissible evidence, 146, 147, 152
- anthropic reasoning
 and testing multiverse theories, 98–113, 139
 anthropic objection against design inference, 40–43, 47
 anthropic shadow, 67–68
 different types of, 15, 18, 50, 85–89
 strong anthropic principle, 40–41, 53, 86
 weak anthropic principle, 40–41, 86
- background information constraint (BIC), 16, 17, 109–111, 114–119, 128, 139–145, 147–152, 164
- Bayesianism
 applied to fine-tuning, 15, 38–40, 42–43, 47–50, 72–84, 86
 background knowledge in, 16–18, 38–39, 47–49, 73, 109–125, 128–129, 140–141, 144, 147–148
 old evidence problem, 42–43, 48
- beauty as a criterion of theory choice, *see* elegance
 as a criterion of theory choice
- Bohmian mechanics, 157
- Boltzmann brains, 122–123, 171, 172
- Born rule, 19, 124–125, 142–144, 158–168
- confirmation bias, 18–19, 179
- cosmic microwave background (CMB), 7–8, 11–12, 77, 79, 120
- cosmological constant, 10, 22–23, 27, 29, 34–35, 98, 101–103, 108, 114–118, 123, 127–129, 131, 180–182
- cyclic cosmology, 8, 12
- dark energy, *see* cosmological constant
- dark matter, 181–182
- decision theory, evidential versus causal, 149–152
- decoherence, 17, 158–159, 161, 163
- Doomsday Argument, 16, 132–142, 144–146, 147, 148, 152
- Dr. Evil puzzle (Elga), 164, 172
- dualities, 10
 AdS/CFT, 10
- Earth
 as fine-tuned for life, 59–62
 elegance as a criterion of theory choice, 29, 90, 123–124
 empirical adequacy as a criterion of theory choice, 9, 15, 31, 32, 89, 124, 125, 159, 161, 163
 epistemic separability principle (ESP), 163–168
 Everett interpretation of quantum theory, 13, 17, 19, 123–125, 142–145, 152, 155–168, 183
 circularity problem in, 160
 definition of branches in, 157–160
 probability problem of, 19, 144, 159–168
 evolution by natural selection, 26–27, 37–38, 62–64
 extra dimensions, 34, 36
- Fermi paradox, 68–69
- fine-tuning by violations of naturalness, 31–35
- fine-tuning for life
 characterization of, 4, 13
 as evidence for design, 13–14, 37–50
 as evidence for a multiverse, 4, 14–15, 53–54, 59, 69–95
 examples, 20–27
 as improbable, 13, 27–30
 and naturalness, 35
 planetary, 59–62
- fundamentality
 loose sense, 5
 ultimate, 184
- future of physics, 18, 26–27, 155, 179–184

200

Subject Index

- God, as designer, 13–14, 18, 36–50
 alternative conceptions of, 46
 anthropomorphic conceptions of, 47
 intellectual conceptions of, 45–46
 traditional theism, 45
 GRW theory, 157
- Higgs boson, 8, 33, 35
 mass, 29, 34–35, 180
- inductive skepticism, 17, 171–173
 inflationary cosmology, 5–8, 11–12, 27, 77, 79, 99
 eternal inflation, 8, 11–12, 99, 104, 119–125,
 128
 testability of, 11–12, 99, 120
 inverse gambler's fallacy, 14–15, 18, 53–71, 73,
 79–83
- large number coincidences, 15, 18, 85–89
 laws of nature
 as determined by first principles, 24, 26
 as environmental, 3–5, 8–12, 73, 117
 as fine-tuned for life, *see* fine-tuning for life
 as potentially environmental, 3
 as potentially unknowable, 184
 as "stringent," 48–49
- magnetic monopoles, 7
 mathematical universe hypothesis (Tegmark), 19,
 174–177
 measure problem, 102–103, 119–125, 128
 modal realism, 19, 155, 168–173
 multiverse
 landscape multiverse, 5, 11–13, 15, 75, 77, 79,
 97–99, 101–103, 114, 115, 118–123,
 127–128, 179, 180
 Lewis's multiverse of possible worlds, 13, 17,
 19, 155, 168–173, 177
 Tegmark's level IV multiverse of mathematical
 structures, 13, 17, 19, 168, 173–177
 multiverse theories
 as allegedly pseudoscience, 178–179
 characterization of, 3
 examples, 11–13
 testability of, 4, 5, 89, 95–131, 145, 178
- naturalness*, 30–36
 Newcomb problem, medical, 150–152
- observer proxies, 103, 116–121, 123, 125–128,
 130, 179
- Presumptuous philosopher problem, 106, 132,
 140–142, 146, 152
 Principal Principle, 146, 147
 pseudoscience, 178–179
- replicability crisis, 126–127
 measures against, 129–131
 researcher degrees of freedom, 16, 19, 125–130,
 132, 179, 182
 risks to the survival of humanity, 64–69
- simplicity as a criterion of theory choice, 29, 90,
 123–124
 Sleeping Beauty problem, 17, 132, 138, 143,
 145–152
 string theory, 9–12
 no alternatives argument for, 9
 supersymmetry, 9, 34, 36
- technicolor, 34, 36