

Index

- a priori, 19, 27, 32–42, 79, 198
- algorithm, 107, 159, 186, 189, 196, 231
- Almagest, 147, 156, 160, 164, 167
- anomaly, 91, 94, 96, 99, 127–129, 133–134, 138, 148–149, 160–162, 175, 179, 183–184, 188, 210, 228, 232–234
- apparent motion, 12–13, 16–18, 24–25, 156
- Archimedean platform, 118–119, 122–123, 221
- Aristotle/Aristotelian physics, 15, 31–32, 34, 77, 80, 107, 109, 118, 147, 152, 155–156, 159, 162–163, 166–168, 174, 181, 210, 216
- art, 4, 65, 72–79, 80, 181, 203
- aspect seeing, 169–170, 173, 175, 178, 180, 182–183
- atomic number, 4, 126–140
- atomic weight, 4, 93, 126–139
- Averroes/Averroist, 156–159
- Bernal, John Desmond, 55, 56
- biological speciation, 116, 136, 198, 211, 214, 233
- Bohr, Niels, 80, 126–127
- Boyle, Robert, 15, 17, 32, 59
- Brahe, Tycho/Tychonic astronomy, 157–158, 159, 163, 164, 166–168
- Bruner, Jerome and Postman, Leo, 175, 228
- Carnap, Rudolf, 28, 40–41, 66–72, 73, 79–81
- categories, 23, 37, 40, 114–115, 118, 163, 176, 177, 179, 198, 228
- Catholic, 158, 166
- Cavell, Stanley, 36, 173, 179
- Chang, Hasok, 29, 222–228, 232, 234, 236
- chemical element. See element, chemical
- Chemical Revolution, 89, 135, 163
- chemistry, 4, 29, 47, 49, 58–59, 80, 125–127, 131–134, 135–136, 195, 208–209
- classes, 195–196, 229, See also kinds (as related to lexicons)
- classical mechanics, 32, 126, 128, 193–194, 195, 197–200, 208
- coherence/incoherence, 11, 43, 49, 101, 124, 203–204, 208, 209–210, 211, 212, 213, 216–218, 220–221, 224
- Conant, James B., 4, 28, 31, 32, 38, 47–54, 56–57, 58–63, 66, 78–80, 85, 173
- concept-laden observation. See theory-laden observation
- conceptual change, 30, 163, 180, 229
- conceptual scheme/framework, 33, 51, 114, 199, 226
- consensus, 3, 48, 61–62, 88–90, 92, 96–97, 100, 146, 184, 222–223, 226, 228, 230–232, 234, 236
- continuity/discontinuity, 73, 79, 80, 87, 125–127, 131, 145, 151–153, 155, 158, 161, 165–166, 168, 176, 197, 199–200, 206, 208, 209, 211–212, 232, 235
- convergent (on the truth), 205–206
- convergent thinking, 92, 95, 183
- conversion, 51, 64, 180, 181–182, 230
- Copernicus, N./Copernican astronomy, 3, 5, 9–26, 115, 137, 138, 145–146, 148, 152–168, 220, 229, 232
- correspondence theory of truth, 4, 105, 106, 116, 121, 124, 204, 206, 207, 212, 215, 217–218, 219, 221
- creativity, 50, 63, 79, 86, 169, 180–184, 190, 192–193, 198, 231, 234, 236
- crisis, 41, 54, 89, 91, 96, 107, 128–129, 130, 133, 134, 145, 160, 162, 168, 180, 187, 190–192, 227, 232, 234
- cumulative/noncumulative progress, 38, 66–67, 71–74, 77–78, 81, 86, 94, 107, 168, 180, 185, 197–198, 226
- cyclical model (Kuhn's), 4, 160, 166
- Darwin, Charles/Darwinian theory, 103, 114, 118, 204–205, 212, 214
- Descartes, René/Cartesian philosophy, 15, 19, 31, 35, 37, 168, 174, 177–178
- Dewey, John, 29, 218
- disciplinary matrix, 98–101, 104, 107, 183

Index

265

- discovery, 3, 5, 15, 25, 50, 54, 72, 75, 126, 128–129, 130, 132, 133–135, 139–140, 167, 183, 185–190, 194–197, 199–201, 215
- divergent thinking, 38, 95–96, 110, 183
- duck/rabbit, 5, 169–172, 175, 178–180
- Einstein, Albert, 22, 23, 73, 80, 82, 103, 108, 186, 192, 194, 199
- element, chemical, 4, 93, 126–129, 130–140, 163, 229
- evolution, biological, 204–205, 208, 214, 221, 233
- evolutionary dimensions (in Kuhn's philosophy), 3, 5, 106, 202–212, 213–215, 217, 221
- exemplar, 4, 50, 98–102, 104, 182, 187–192, 193, 194–196, 198–199, 205, 226, 228, 231, 234
- Feyerabend, Paul, 106, 166, 224, 225
- fragmentation (of science), 90, 202–203, 209–211, 219, 221
- Frank, Philipp, 28, 31, 37–38, 61–62, 63
- Friedman, Michael, 28, 41–42
- Galilei, Galileo, 13, 15, 32, 50, 79, 146, 156–157, 159, 163, 168, 174, 196, 198, 232
- general education, 32, 38, 52–53, 56, 59, 61, 62
- geocentric (cosmology), 10–11, 13, 145, 164, 165, 167
- gestalt figure/switch/psychology, 5, 29, 36, 108, 170, 172, 179–182, 188, 194, 200, 230
- Gombrich, E., 75
- Hanson, N. R., 46, 108, 170, 171–172, 179, 181, 195
- heliocentric (cosmology), 13, 145, 157, 163–166
- Hempel, C., 66, 175, 193
- historical development (of science), 10, 13, 16, 19, 73, 78, 85–86, 208, 209–210, 215, 217
- historical perspective, 207, 211, 215
- historical school (of philosophy of science), 212, 223
- historiography of science, 21, 44, 155, 212
- history and philosophy of science, 2, 13, 18, 25, 41, 45, 54, 63, 85, 125, 186, 193, 202, 205
- history of art, 72, 75, 80
- history of philosophy, 19, 43, 70, 71, 79–80, 106, 188
- history of science, 26, 31–32, 34, 41–44, 45, 47, 49, 52, 54, 58–60, 61, 63–64, 68, 70–71, 76, 78, 85, 87, 88–89, 96, 100, 103, 119, 131, 133–134, 145–146, 152, 158, 160, 176, 180, 182, 186, 188, 196–197, 200, 203, 206, 208, 214, 221, 223, 226, 233
- Hoyningen-Huene, Paul, 2, 3, 11, 22, 24, 32, 33, 35–36, 80, 109, 116, 160, 176–177, 202, 213, 214, 224
- Hume, David, 19–20, 31, 35, 37
- idealism, 9, 11, 30, 40, 79, 80, 118, 177
- incommensurability, 3–4, 40, 72, 74–76, 80–81, 89, 105–124, 129, 131, 137, 145, 166, 168, 197, 198–199, 200, 209, 210–211, 217, 230
- indeterminacy of translation, 102, 106, 110–111
- innovation, 15, 21, 61, 91, 98, 146, 155, 180, 183–184, 185–186, 187, 191, 195, 198, 199, 200
- interpretation, 98, 100, 109, 112–114, 119, 131, 136, 170, 172–175, 178, 185, 191–192, 199, 231–232, 234
- isotopes, 129, 130, 134, 136, 138–139
- Jesuit, 159, 166, 168
- Jupiter, 138, 147, 159, 167
- Kant, Immanuel, 3–4, 10, 19–21, 23–24, 27–44, 77, 79–80, 114, 118, 177, 198, 213, 216
- Kepler, Johannes, 145–146, 156, 158–159, 163, 165–168, 232
- kinds (as related to lexicons), 113, 115, 138, 229, 233,
See also classes
- Koyré, Alexandre, 29, 32, 34, 81
- Kuhn Archives, Thomas S. See TSK Archives
- Langer, Susanne, 28–31, 35–36
- Laudan, Larry, 225, 227, 234
- Lavoisier, A., 135, 163
- lexical change, 4, 118, 133, 137, 209, 211, 229
- lexicon, 26, 105, 112, 113–124, 129–130, 136–140, 216, 217, 219, 221, 226, 228–230, 233–234, 236
- lexicon-laden observation. See theory-laden observation
- local incommensurability, 105–106, 111–113, 115–123
- Locke, John, 15, 58, 79
- logic, 5, 20, 32–34, 36, 49, 61, 70, 98, 101–104, 123, 152, 162, 169, 172, 181, 182–183, 185–187, 189, 194–195, 198–199, 201, 216, 218, 220
- logical empiricism/logical positivism, 27, 37–38, 41, 43, 65–69, 70, 71–72, 76–77, 78–82, 132, 186
- Lowell Lectures, *The Quest for Physical Theory*, 32, 54, 56, 58, 62, 82
- Lutheran, 157, 166
- Marcum, James, 36, 74, 106, 124, 202, 208, 214
- Mars, 138, 147, 157, 167
- Masterman, Margaret, 32, 33, 97–98, 104, 226
- McCarthy, Senator Joseph/McCarthyism, 51–55, 57, 62, 64
- meaning change, 71, 106, 108, 109, 110–113, 115, 121, 130, 132, 135, 137, 173, 182, 191, 194, 198–199
- Mendeleev, D. I., 128, 133, 135–136, 137
- Mercury, 128, 138, 147, 148, 151–152, 153–155, 159, 160–161, 163, 167

- metaphysics, 3, 9–11, 15–17, 19, 22–25, 42, 68, 78, 81, 92, 99, 104, 109, 116, 123, 152, 191, 218
 methodological incommensurability, 105–107, 117, 209
 Mill, John Stuart, 58, 225
 mind-independent world, 11, 105, 109, 116–119, 122–124, 178, 204, 206, 207, 213, 215
 model, 19, 33, 42, 57, 61, 65, 67, 71, 75, 79, 81, 97–104, 131, 133, 148–156, 158, 160–162, 165, 166, 181, 182, 190, 192–193, 195–197, 198–199, 201, 203, 205, 207, 209, 217, 221, 227
 mop-up work, 4, 87, 91, 181
- Nagel, E., 66–67, 193
 National Science Foundation (NSF), 56–57
 Neo-Kantian(ism), 21, 27–31, 33, 35, 41, 199
 Neurath, Otto, 55–56, 68–69, 72, 80
 Newton, Isaac/Newtonian physics, 13, 15, 22, 32, 37, 50, 59, 73, 79, 82, 93, 103, 107, 118, 128, 145, 157, 158–159, 166, 168, 191, 193–194
 niche, 118, 177–178, 203–204, 211, 213–216, 217
 no-overlap principle, 113, 115, 137–138, 140, 211, 229
 normal science/normal research, 3–5, 35, 39, 41, 61, 62, 78, 85–88, 90–104, 125, 133, 146–149, 152–153, 160–162, 168, 175, 180, 187–192, 194–195, 197, 199, 222, 226–227, 230–231, 236
 novelty, 9, 85, 90–92, 94–96, 100–103, 147, 161, 163, 166, 168, 169, 180, 183, 232
 object-sided, 11–15, 16–24
 oxygen, 32, 50, 134, 135, 163, 174, 185, 186
- paradigm, 4–5, 9, 25, 28–30, 32–34, 36, 38–39, 40–42, 62, 64, 75–76, 80, 90, 96–99, 100, 102, 105, 107–109, 115, 117–118, 119, 121–123, 129–130, 132–133, 136–137, 146–147, 160–162, 168, 170, 172, 174–177, 178–180, 182–184, 187–193, 199, 216, 226, 228, 231–233, 236
 pedagogy, 30, 49, 63, 88, 100
 periodic table of elements, 127–129, 131, 133, 134–136, 235
 phlogiston/phlogiston theory, 32, 163, 223–224
 Piaget, Jean, 29, 31, 33–34, 36, 40, 42
 Plato/Platonist, 11, 13, 15, 164–165
 pluralism, 5, 48, 217, 223–228, 231–232, 233–236
Plurality of Worlds, xiii, 1, 116, 117, 124, 202, 203, 212, 214, 215, 218, 219
 Popper, Karl R., 70, 73, 75, 78, 81, 86, 88, 90, 100, 186, 227, 231, 234
 positivism. See logical empiricism/logical positivism
 printing, 159, 164
 progress (scientific), 18, 33, 51, 59, 63, 66–68, 71–73, 76, 77–78, 87–90, 92, 95, 97, 98, 103, 148, 179, 181–183, 185, 188, 197, 203, 204, 206, 208, 214, 221, 223, 229
 Ptolemy/Ptolemaic astronomy, 115, 137, 138, 139, 145–152, 156–163, 165–167, 229
 puzzle-solving tradition, 36, 43, 50, 88–90, 91–102, 149, 187, 189–192, 195–196, 231
 quantum mechanics, 10, 22, 23, 32, 41, 49, 89, 126–127, 131, 159, 186, 191–194, 196–200, 203, 230
 Regiomontanus, 156, 164–165
 Reichenbach, H., 30, 38, 41, 68, 70–72, 79–80
 relativity theory, 10, 22, 32, 41, 159, 193–194, 195, 199
 revolution/revolutionary change, 3–5, 10, 15, 17–19, 23, 28, 61, 66, 75–76, 78, 80, 89, 107–108, 109, 111, 117, 125–141, 151, 158, 162–163, 168, 176, 178–183, 187–188, 190–192, 193–200, 202, 204, 208–211, 229–230, 232
 Richardson, Alan, 32, 35, 41, 43–44, 66, 67
 Ruphy, Stephanie, 224, 226
- Sarton, G., 66, 73, 78, 80
 Saturn, 138, 147, 167
 Schlick, M., 69, 72, 80
 scientific community/community (of scientists), 4, 32, 37, 39, 43–44, 50, 60–62, 63, 76, 82, 87–90, 95–102, 104, 107, 109, 114–115, 118, 120–121, 127–128, 140, 176, 180, 182, 183, 185, 211, 215, 218, 222, 225, 228, 232–234, 236
 scientific method, 49, 58, 60, 186, 222
 scientific philosophy, 40–41, 66, 67–72, 77, 79–82
 scientific revolution, 3–5, 26, 28, 45, 64, 75, 107, 111, 125–132, 136–138, 140–141, 151, 160, 163, 169–170, 181, 188, 197, 198, 202, 209, 229
 Scientific Revolution, the, 17–18
 scientific specialty, 68, 116, 118, 136–137, 198, 208–211, 213, 217, 221, 222, 225, 228–231, 233–236
 ‘seeing’ and ‘seeing as’, 169–173, 179
 semantic incommensurability, 105–108, 110–112, 117, 119–123, 209
 similarity relation, 36, 114, 187, 196, 199
 social structure of science, 82, 104
 sociology of science, 61–62, 63, 188, 189
 specialization, 68, 116, 198, 208, 209–211, 235–236
 See also scientific specialty
 speciation, 137, 206, 208–211, See also biological speciation
 Strong Programme, the, 231
 subject-sided, 3, 11–15, 16, 18–24, 26
 Sun, the, 10–14, 17–19, 94, 115, 137–138, 139, 145, 147–148, 157–159, 162–163, 165–167, 229

Index

267

- symbolic generalization(s), 98–100, 102
systems of practice, 224, 227, 232,
234–236
- taxonomy/taxonomic categories, 113–115, 120, 137,
138, 198, 209–211, 228
- Thalheimer Lectures, 29, 82
- theoretical change, 66, 126–127, 128, 131, See also
revolution/revolutionary change
- theoretical monism, 3, 5, 222–223, 225–228, 232,
234–235, 236
- theoretical pluralism, 224–225, 227
- theoretical terms/notions, 36, 131,
229–230
- theory of truth, correspondence. See
correspondence theory of truth
- theory-dependence (of observation). See theory-
laden observation
- theory-laden observation, 3, 5, 108–109, 114, 117,
121–123, 169, 171, 179
- thought experiment, 50, 80, 81–82
- true motion, 12–13, 15, 16, 18
- truth, 5, 13–15, 21, 38, 41, 50–51, 70–71, 116–124,
184, 185, 188, 202–208, 211, 212–221, 225, See
also correspondence theory of truth
- TSK Archives, xiii–xiv, 1, 36, 45, 46, 53, 54, 58, 62,
63, 73–76, 82
- unified world view/unified science/unity of
knowledge, 68, 204, 206, 209–210, 216
- Venus, 138, 147, 159, 163, 167
- Whig/anti-whiggish history, 17, 186, 188, 193
- Wittgenstein, Ludwig, 28, 30–31, 33, 35–36, 39,
169–175, 179, 189
- world change, 10, 25–26, 169, 175, 176, 230
‘world-in-itself’ vs. phenomenal world,
176–178, 213
- Wray, K. Brad, 2, 4, 5, 10, 28–29, 32, 61, 82,
125–141, 198, 202, 207, 209, 211, 214, 216, 226,
228, 229, 231, 233
- X-ray, 32, 50, 129, 134, 171–172