

Index

- Aboriginal Australians, 34–38
- aboulia, 119–120
- Acedia, 112
- Acheulean tool set, 22–23
- Adams, Douglas, 1
- aerosols, 161, 163
- Africa, human origins, 12–13
- agriculture
 - crops, volcanic gases, 166
 - forest fires, 33
- Ahmed, Sarah, 114
- alcohol, 210
- Aldhelm, 2
- Alexander of Aphrodisias, 205
- Alexander, Hugh, 103
- alpha brainwaves, 216
- Alta fjord rock art, Norway, 180–181, 199
- Amae*, 111
- Amanita muscaria*, 196
- Americas, psychoactive plants, 196
- ammonites, 173–174
- amputation, 181–183
- anadenanthera, 196
- anemones, 25
- angularity (paleography), 137–138, 141
- animals. *see also* birds
 - emotions, 110
 - pyrophiles, 29, 34
 - rhythm, 209
 - tool use, 23–27
- anthropology, 111
- Antikythera mechanism
 - Freeth's AMRP research, 68–71
 - function summary, 72–73, 77–78
- modern discovery, 58–60
- origin, 73–76
- Price's research, 63–66
- uniqueness, 58, 61–63
- Wright's research, 66–68
- antimatter, 57
- apes
 - problems of model for human development, 32–33
 - tool use, 24–25
- Archimedes, 75–77
- Aristotle, 41
- arrow of time, 52–56
- art
 - conscious mind natural selection, 185
 - prehistoric, 15–19, 187–190, 197, 198, 199–200
 - resonance, 206
- ash, 158, 160–161
- aspect (paleography), 127–128, 131, 143
- astrolabes, 79
- astronomical models, 74–81. *see also* Antikythera mechanism
- Athens
 - National Archaeological Museum, 58–59, 61
 - Tower of the Winds, 62–63
- atmosphere, influence of volcanism, 158–165
- atoms, 44
- attention, 186
- Auchmuty, Rosemary, 113

Index

- Australia
 - firehawks, 34–36
 - tool use, mainland compared to Tasmania, 37–38
- Australopithecines, 20–21
- Austria, 176, 177
- Avicenna, 41–42
- Awumbuk*, 111
- ayahuasca, 196
- baboons, 25
- Baining people, 111
- Barthes, Roland, 116
- ‘Bartleby the Scrivener’ (Melville), 119–120
- basalts, 153
- beans, 166
- beetles, 29
- behaviour
 - concept of fire, 32, 36
 - cultural transmission, 27, 36
 - genetically coded, 27
 - social imitation, 204
- Benedictine scribes, Rochester, 145–147
- Benetowa, Sara, 202
- beta brainwaves, 216
- Big Bang, 43, 49, 54, 56, 205
- Big Bang Theory, The* (TV series), 107
- Bill Tutte, 102
- biomimetics, 222
- Birch, Frank, 96
- birds
 - dancing, 209
 - gastroliths, 30
 - tool and fire use, 34–36
- black holes, 43, 49, 51
- Bleak House* (Dickens), 112
- Bletchley Park, 82, 94, 97–103
- Blyton, Enid, 113
- boarding schools, 113
- boats, 188
- Boethius, 78
- Bohr, Niels, 44–45
- Boltzmann, Ludwig, 53–54
- bomba machine, 92–93
- bombe machine, 82, 98–103
- boredom, 112
- Born, Max, 45
- bottlenose dolphins, 26–27
- boxer crabs, 25
- boxwood, 24
- brain
 - default mode network (DMN), 194–195
 - drumming, theta response, 191
 - harmony, 216–217
 - imaging, 192, 193–194, 210
 - plasticity, 182–184, 186, 195
 - resonance, 206–207
- Brave New World* (Huxley), 110
- Broglie, Louis de, 45
- Bromley, Allan, 66
- Brown, Judith, 116
- Brown, Thomas, 110
- Budleigh Salterton, Devon, 173
- bushbabies, 25–26
- Byrne, Gabriel, 116
- calendars, Greek, 64–65
- Callippic cycle, 67
- camp, 118
- cannabis, 196, 201–202
- carbon dioxide, 160
- carbon isotopes, 173
- Carhart-Harris, Robert, 195
- Caroline minuscule, 133, 133, 136, 138–139
- carrion, 34
- Cassiodorus, 78
- ‘Cat Person’ (Roupenian), 121–122
- Catalogues des manuscrits datés*, 131, 137
- cause and effect, 55
- cave art, 18–19, 180–181, 187, 197, 198
- cenote, 222, 227, 227
- Central Atlantic Magmatic Province, 157, 171, 175
- ceremonies, 228
- Chaucer, Geoffrey, 112
- Chicxulub impactor, 155
- chimaeras, 15–17
- chimpanzees, 24–26, 31–33, 204

Index

- China, 201
- Chrétien de Troyes, 3
- Christ Church, Canterbury, 146
- Chrysippus, 205
- Churchill, Winston, 97, 103
- Cicero, 75–76
- cinnamon, 202
- Clark, Joan, 97
- climate
 - influence of volcanism, 158–166
 - population size effects, 37
- clocks
 - astronomical, 67
 - entrainment, 209
 - escapement, 79–80
 - mechanical gearing, 64
 - Tower of the Winds, Athens, 62–63
- clockwork universe, 42
- code breaking
 - Bletchley Park, 82, 94, 97–103
 - Polish Cipher Bureau, 90–93
- codicology, 129–131
- Coen Brothers, 116
- coffee, 166
- cognition, decoupling, 192–193
- cognitive dissonance, 218
- colophons, 129–131
- Colossus, first computer, 102
- Columbia River flood basalt, 155, 158
- community, 219
- compasses, 152
- complexity, 56
- computers, first, 102
- Confucianism, 215
- conifers, 28
- consciousness
 - ceremonies, 181, 188, 191–192. *see also* shamanism
 - collective, 208, 211
 - entropy and complexity, 56
 - Global Neuronal Workspace, 213
 - nature of, 37
- control theory, 214
- cooking, 29–31, 36
- Copenhagen interpretation, 45–47
- Copernicus, Nicolaus, 220
- Core Theory, 42–43, 50
- cosmos, Pythagorean mathematical structure, 215
- Courtillot, Vincent, 153–154, 169
- Cousteau, Jacques, 74
- Covid-19 pandemic, 8–9
- crabs, 25
- creativity, 192
- crops, volcanic gases, 166
- Csikszentmihalyi, Mihaly, 183, 218
- culture
 - effect of geography, 195
 - evolution, 188, 221
 - music, 208
 - psychedelics and diversity, 186, 197
 - types of emotions, 111, 113
- cybernetics, 214
- Daly, Mary, 120
- dancing, 192, 206, 209–211, 228
- Daniel, Arnaut, 112
- dark energy, 43
- dark matter, 43, 57
- Darwin College Lectures, 8, 153–154, 169, 184
- Darwin, Charles
 - evolution, 10, 12, 187
 - on change, 109
 - on control of fire, 28, 34
 - on emotions, 104–106
 - on fossil record, 170
 - on harmony, 186, 214
 - on imitation, 203
 - on population size, 39
 - on sympathy, 204–205
 - on tool use, 25
- datura, 196, 202
- Dawkins, Richard, 203, 220
- Deccan Traps, 155–157
- Decision Problem, 93–94
- Deep Thought, 1
- default mode network (DMN), 194–195
- Deheane, Stanislaw, 213

Index

- demographics, knowledge cultural transmission, 37–39

Denisovans, 11–12, 14

Descent of Man, The (Darwin), 12, 25, 39, 204, 214

Dickens, Charles, 112

digestion, 30

Dikker, Suzanne, 210

dinosaurs, 30, 154

disorder. *see* entropy

dissociation, 192

diving, 58–59

DNA, genetically coded behaviour, 27

dolphins, sponging, 26–27

Dönitz, Karl, 101

Dowson, Thomas, 197

drag ball police raids, 117–119

dragon fruit, 166

dreams, 192

drinks, sacred, 180

drumming, 179–180, 191–193, 211

duct (paleography), 132, 135–136

Durkheim, Émile, 208

Earth

 - age, 153
 - core, 152

eclipses, Greek predictions, 70, 80

ego, 194

Einstein, Albert, 44, 48–49

Ekman, Paul, 107

el Kaliouby, Rana, 108

El Panama, Nicaragua, 166–167

electromagnetism, 44

electrons, quantum theory, 44–45

elephants, 25

embarrassment, 110

emotional communities, 112, 114

emotional intelligence, 106, 122

emotions

 - complexity, 122
 - enigmatic, 109, 115–122
 - historical development of understanding, 109–114
 - micro-expressions, 107

reading others, 104–108, 115

unexpected, 114

empathy, 205

encryption, 83. *see also* Enigma machine

energy

 - First Law of Thermodynamics, 53
 - quantum theory, 51

engineering, biomimetics, 222

England, medieval manuscripts, 143

Enigma machine

 - Bletchley Park, 82, 94, 97–103
 - bombe machine, 82, 98–103
 - Enigma A, 83
 - Enigma I, 84–85
 - keysheets, 87–90
 - navy code book, 94–95
 - Polish Cipher Bureau, 90–93
 - rotors, 85, 90–91, 101

enigma, etymology, 2

Enigmata (Aldhelm), 2

entanglement, 47–48, 50–51

entoptic visuals, 197

entrainment, 208–210

entropy, 52–56

epicycles, 67–68, 80

ethnobotany, 195–203

ethnographies, 120

eucalyptus, 28

Everett III, Hugh, 46–48

evolution. *see also* natural selection

 - culture, 188, 221
 - Darwin's discovery, 10, 12
 - harmony, 213–220
 - humans, 12–15
 - in conscious mind, 184–185, 192, 228
 - integration with Platonism, 186
 - of the mind, 15, 37, 185–188, 221
 - phenotype, ancestors or convergence, 191
 - progress is not an outcome, 13
 - sympathy, 204–205
 - system requirements for emergence, 185
 - tree metaphor, 14

Exeligmos cycle, 70

Exodus, 201–202

Index

- Expression of the Emotions in Man and Animals*, *The* (Darwin), 104–106
- extinction events
 - large igneous provinces, 153, 154, 169–170
 - Triassic mass extinction, 170–171, 171, 175–176
- facial recognition algorithms, 106–108
- fainting, 112
- Febvre, Lucien, 110
- feelings, 207
- Feldmann Barrett, Lisa, 108
- Feynman, Richard, 1, 44
- Fierce Attachments* (Gornick), 114
- fine-structure constant, 1
- fire fountains, 167, 168
- fire lilies, 28
- fire walking, 210
- fire, control of, 27–37
- fire-chaser beetle, 29
- firehawks, 34–36
- fish in hand, 212
- Fleming, Ian, 95–96
- flow states, 183, 218–219
- Flowers, Tommy, 102
- flutes, bone, Hohle Fels, 190
- Foley, Brendan, 74
- FOMO, 112
- food, cooking, 29–31, 36
- Forbidden Zone, Mongolia, 179–180
- form constants, 197, 198
- fossils, 170, 173
- France, medieval manuscripts, 142
- Freeth, Tony, 68–71
- frequency, 217–218
- friendship, 113
- Friston, Karl, 195
- From Russia with Love* (Fleming), 96
- fumaroles, 158
- future, arrow of time, 52–56
- Galileo Galilei, 42
- games, ancient Greece, 67, 75
- gamma brainwaves, 216
- Garbo, Greta, 116
- gases
 - soil gas, 158
 - volcanic, 160–161, 176
- gastroliths, 30
- gearwheels, 64–65, 76–80
- gene flow events, 14
- general relativity, 49–50
- Genghis Khan, 179
- geography, effect on culture, 195
- geology, volcanism record, 169–171, 173
- Germany, medieval manuscripts, 143
- gizzards, 30
- Global Neuronal Workspace, 213
- globalisation, 221
- golden mean, 216
- Goleman, Daniel, 106
- gorillas, 25, 33
- Gornick, Vivian, 114
- gospel choirs, 192
- gravity, 49–50
- guitar string frequencies, 217–218
- Gundulf of Bec, 145
- hallucinations, 207
- hallucinogenics. *see* psychedelics
- Hamlet* (Shakespeare), 10
- handwriting. *see* letters
- happiness, 218
- harmony, 186, 213–221, 228
- heart, 209
- Hebern, Edward, 83
- Heisenberg, Werner, 45
- henbane, 202
- Hernández, Claudia Madrazo, 222–227, 223
- Hernández, Roberto, 222–227, 223
- Hewlett Packard (HP), 69
- Hilbert, David, 93
- Hipparchus, 72, 75
- Hippasus, 215
- Hitchhiker's Guide to the Galaxy*, *The* (Adams), 1
- Hitler, Adolf, 102
- Hofmann, Albert, 196

Index

- Holuhraun eruption, Iceland, 167, 167–168
- Holy Grail, 3
- Homo erectus*, 20, 23, 29
- Homo ergaster*, 23
- Homo habilis*, 20–21
- Homo sapiens*, 11–14, 23, 33
- Houlbrook, Matt, 117–118
- Huizinga, Johan, 126–127
- humans. *see also* consciousness, *see also* mind
 - ancient morphology, 33
 - evolution, 12–15
 - genetic diversity, 15
 - migration, 37, 221
 - pan-African origins, 12–13
 - time on Earth, 153
 - uniqueness theories, 11, 19
- Humboldt, Alexander von, 220
- Hurault, Paul, 18
- Huxley, Aldous, 110
- Huygens, Christiaan, 209
- hydrogen halides, 161
- hydrogen sulphide, 160
- hyperscanning, 210
- Ibn Sīnā, 41–42
- Iceland, 167, 167–168
- Ich Korig, Mongolia, 179–180
- Ifaluk, 111
- igneous provinces, large, 155–158
 - eruption style, 165
 - extinction events, 153, 154, 169–171, 171, 175–178
 - mercury emissions, 176
- illusions, mirror box therapy, 182–183
- Ilongot people, 111
- imagination
 - altered states, 193
 - effect of geography, 195
 - evolution, 17, 186–188, 213, 221
 - neural synchrony, 217
- imitation, 203–204
- Incredibles*, *The* (film), 10
- Indonesia, cave paintings, 18–19, 187
- industrial revolution, 64
- intuition, 193
- James Bond, 96, 115
- Japan, 111
- Jebel Irhoud, human fossils, 12, 15
- Johnson, Wilko, 114
- Jones, Alexander, 73, 76
- Judah, 201
- Jungle Book*, *The* (Kipling), 30
- kava, 196
- Keen, Doc, 101, 103
- Kenyanthropus platyops*, 21–22
- Ker, Neil, 130, 146
- King Lear* (Shakespeare), 109
- knowledge
 - cultural transmission, 27, 36–39
 - social imitation, 204
 - wave function, quantum mechanics, 48
- Kontos, Dimitrios, 59
- Kuhjoch, Austria, 177
- Kuhn, Thomas, 40
- Kundalini meditation, 182, 210
- Laki eruption, Iceland, 167
- language, 203, 217
- Laplace, Pierre-Simon, 42
- large igneous provinces, 157
- lava, 157, 159, 173
- Leonardo da Vinci, 115
- letters. *see also* scribes
 - angularity, 137–138, 141
 - dotted i, 140, 141, 143–144
 - e tongue, 136, 140–141
 - information about text production, 125–126, 129
 - length, 138–140, 139
 - stroke variation, 132, 135–142
 - style differences, 131–134
- Lewis-Williams, David, 197
- Life on the Earth* (Phillips), 170
- Liget*, 111
- light
 - interactions strength, 1
 - quantum theory, 44
- Lin, Albert, 181, 187
- Lionman of Hohlenstein-Stadel, 15, 188

Index

- Lipps, Theodor, 205
- Littera textualis, 133, 135, 139, 143–144
- Lomas, James Derek, 184
- loop quantum gravity, 50
- Lorde, Audre, 120
- Lorenz machine, 102
- Loschmidt, Josef, 54
- love, 112
- Löwenmensch, 15, 188
- LSD, 196
- Lucretius, 170
- Lyme Regis, 171–173
- maceration, 30
- magic, 206
- magic mushrooms, 182–183, 193, 194–195, 196–197, 199–200
- magma, 151
- maize, 166
- Malory Towers* (Blyton), 113
- Malzbender, Tom, 69–70
- Mamoulian, Rouben, 116
- manuscripts. *see also* letters
 - colophons, 129–131
 - digitisation, 126
 - medieval scribes, 125–126
 - physical experience, 126–127
 - quires, 130
 - topline writing, 130
- Many-Worlds quantum mechanics theory, 46–48
- March of Progress*, 13
- Marcus Aurelius, 205
- Masaya Volcano, Nicaragua, 148–151, 158, 166–167
- mass extinctions. *see* extinction events
- mathematics, harmony, 215–216
- Maxwell, James Clerk, 44
- Maya cosmology, 222
- Mayan bloodletting ceremonies, 186, 211, 212–213
- measurement problem, quantum mechanics, 45–46
- mechanics, classical, 42
- meditation, 182–183, 192, 210
- Melville, Herman, 119–120
- memes, 203
- memories, arrow of time, 55
- mercury, 161, 175–176, 176–178
- Mercury, 68
- Metonic cycle, 65, 67
- Mexico, ‘Ganz field’ installation, 222–227, 223
- micro-expressions, 107
- Micronesia, 180
- migration, 37, 221
- Miller’s Crossing* (film), 116–117
- Minamata Convention, 175
- mind. *see also* consciousness
 - evolution, 15, 37, 185–188, 221
 - theory of other, 207
- Minkowski, Hermann, 49
- mirror box therapy, 182–183
- mirror neurons, 186, 207
- modernity, population size and cultural transmission, 37–39
- momentum, 41–42
- Mona Lisa* (Leonardo), 115
- monasteries, scriptoriums, 145–147
- Mongolia, 179–180
- monkeys, 31
- Moon
 - apparent speed, 71–72
 - Metonic cycle, 65, 67
- morality, 205
- Morocco, 175–176
- Mosso, Angelo, 110
- motor resonance, 207
- Mount Etna, Sicily, 161, 162
- Mount Pinatubo, Philippines, 161, 164
- Mount St Helens, 158
- Murray, Stephen O., 118
- music, 208, 210, 215–216, 218–219
- myths, 15–17
- Nan Madol, Micronesia, 180
- Nastulus, 79

Index

- natural selection. *see also* evolution
 - harmony, 214, 221
 - in conscious mind, 184–185, 192
 - system requirements for emergence, 185
- Neanderthals, 11, 14, 24
- neuroplasticity, 182–184, 186, 195
- New Zealand, 152
- Newton, Isaac, 42, 220
- Nicaragua, 148–151, 166–167
- Norway, 181, 199
- nostalgia, 112
- objective-collapse theories, 48
- obsidian, 20
- oceans, anoxic events, 169
- octaves, 215–216
- oil, sacred, 201–202
- Oldowan tool set, 20, 22
- Olympics, 67
- Omo Kibish, human fossils, 13
- Operation Ruthless, 95–96
- orangutans, 33
- order. *see* entropy
- Ordovician mass extinction, 169, 178
- Origin of Species, The* (Darwin), 12, 109
- Oxford University, 170
- pain, 181–183
- palaeoanthropology, 14
- Palaeolithic, etymology of word, 23
- paleography. *see also* letters
 - angularity, 137–138, 141
 - aspect, 127–128, 131, 143
 - duct, 132, 135–136
- Papua New Guinea, 111
- paradigms, 40
- parakeet, dancing, 209
- Parkes, Malcolm, 128
- particles
 - interaction strength, 1
 - quantum theory, 44–45
- Past Hypothesis, 54–55
- patterns
 - brain, 217
 - default mode network (DMN), 194
 - laws of physics, 42
- perception, 193, 217
- peyote, 196
- phantom limb pain, 181–183
- Philippines, 111, 152, 162, 164
- Phillips, John, 170
- Philolaus, 215
- phosphenes, 197
- physics
 - arrow of time, 52–56
 - Core Theory, 42–43, 50
 - definition, 41
 - development of classical mechanics, 41–42
 - quantum mechanics, 44–48, 50–51
 - relativity, 48–50
 - standard models, 41
- pilot-wave theories, 48
- pineapples, 166
- Pixar, 10
- Planck, Max, 44
- planets, movement of, 67–68
- plants
 - psychoactive, 196–197, 210
 - pyrophytic, 28–29
- plasticity, 182–184, 186, 195
- Platonism, 186
- Pohnpei, Micronesia, 180
- Polish Cipher Bureau, 90–93
- pom-pom crabs, 25
- Popper, Karl, 4, 184–185, 220
- population size, knowledge cultural
 - transmission, 37–39
- Posidonius, 75
- power structures, 202
- prefrontal synthesis, 188
- Pregothic script, 133, 134, 136–137, 139–140, 142–143
- Price, Derek de Solla, 62–66
- priests, sacred oil, 201–202
- probability, quantum mechanics, 45
- progress, not part of evolutionary process, 13
- psilocybin, 182–183, 193, 194–195, 196–197, 199–200
- psychedelics, 183, 186, 193, 194–195, 196–197

Index

- Purdie, Alex, 118
- pyramid 'Ganz field' installation, 222–227, 223
- pyroclastic flows, 160
- pyrophiles, 29, 34
- Pythagoreans, 215–216
- quantum mechanics, 44–48, 50–51
- Queen Christiana* (film), 116
- Queer London* (Houlbrook), 117
- Question of Life, the Universe, and Everything, 1
- quires, 130
- radiography, 64
- rage, 110–111
- Ramachandran, V. S., 182, 186, 207
- Rao, Ramesh, 210
- raptors, tool and fire use, 34–36
- reality problem, quantum mechanics, 46
- REBUS model, 195
- Reefer Madness* (film), 202
- Reinhard, Johan, 191
- Rejewski, Marian, 90–91, 102
- relativity, theory of, 48–50
- replication, 185–186, 203–205, 221
- resonance, sympathetic, 205–211, 228
- Rhodes, 73, 75–76
- rhythm, 206, 208–210
- riddles, 2
- Rift Valley, Africa, 12
- Rochester, medieval scribes, 145–147
- rock art, 18–19, 180–181, 187, 197, 198, 199–200
- Roupenian, Kristen, 121–122
- Różycki, Jerzy, 90
- Ruskin, John, 115
- Sacks, Oliver, 206
- sadhus, 192
- sakau, 180
- San Pedro cactus, 196
- Saros cycle, 70
- satellite observations, 161, 165
- Saturn, 68
- Scherbius, Arthur, 83–84
- school fiction, 113
- Schrödinger equation, 45–46
- Schrödinger, Erwin, 45, 47
- Schrödinger's Cat, 47–48
- Schlutes, Richard, 196
- science, paradigms, 40
- scribes

 - adoption of script changes, 142–147
 - stroke variation, 132
 - topline writing, 130
 - writing style, 125–126

- sculpture

 - ancient Greek, 60
 - prehistoric, 15–18, 188–190

- Scythians, 200
- selection, 185–186, 221
- Shakespeare, William, 10, 109
- shamanism, 179–180, 184, 186, 190–192
- Siberian Traps, 158, 176
- Siberian Tungus people, 191
- simplicity, 56
- Smith, Adam, 204–205
- social bonds

 - entrainment, 209
 - fireside, 30
 - harmony, 219

- soil gas, 158
- solar wind protection, 152
- Song*, 111
- Sontag, Susan, 118
- spacetime, 49–51
- special relativity, 49
- speech enciphering, 102
- spinal cord, 209
- spirituality, 190, 202
- sponge divers, 58–59
- sponging dolphins, 26–27
- St Audrie's Bay, Somerset, 173
- stairs, falling down, 170
- Stoicism, 205
- stomach stones, 30
- Stonehenge, 199–200
- stratosphere, 162
- string theory, 50
- Stuart, David, 211–212
- Sufism, 191

Index

- sulphur dioxide, 157, 160, 162–163
- Sumatra, 159
- Sun, Metonic cycle, 65, 67
- sundial, Byzantine, 78
- Swinton, Tilda, 115
- sympathy, 186, 203–205, 210, 213, 221, 228
- synchrony, 208–211, 213, 216–217
- synthetic imagination, 188
- Taal Volcano, Philippines, 152
- taboos, 202–203
- Tasmania, 37–38
- teamworking, 209–210
- technology
 - dominant form in history, 23–24
 - emotion detection, 106–108
- teeth, 30
- THC, 201
- Theory of Mind, 37
- thermodynamic laws, 53
- Thilo-Schmidt, Hans, 90
- time, arrow of, 52–56
- Toba caldera, Sumatra, 159
- tool usage, 20–27, 37–38, 188
- Tower of the Winds, Athens, 62–63
- trance, 191–192, 218
- Triassic mass extinction, 170–171, 171, 175–176
- Troilus and Criseyde* (Chaucer), 112
- troposphere, 162
- Tungus people, 191
- Turing, Alan
 - background, 82–84, 93
 - character, 96–97
 - death, 97–98
 - Decision Problem, 93–94
 - Enigma code breaking, 82, 95, 98–103
 - sexuality, 97
 - work after war, 102
- Turrell, James, 222–227, 223
- Twinn, Peter, 96
- Ultimate Answer, 1
- uniqueness theories of humans, 11, 19
- universe
 - Big Bang, 43, 49, 54, 56, 205
- clockwork, 42
- complexity, 56
- Many-Worlds theory, 48
- Pythagorean mathematical structure, 215
- sympathetic resonance, 205
- vacuums, 51
- variation, 185, 192, 195, 203, 213, 221
- Venus of Hohle Fels, 17–18, 189
- vervet monkeys, 31
- vibe, 208
- volcanism
 - environmental impact, 158–165
 - large igneous provinces, 153, 154, 155–158, 165
 - Masaya Volcano, Nicaragua, 148–151, 166–167
 - sediment core dating, 173
- Voynich Manuscript, 3
- Wallace, Alfred Russel, 186–187, 204, 214
- water, volcanism as source, 160
- waves
 - brainwave harmony, 216
 - quantum theory, 44, 46
- Welchman, Gordon, 101, 103
- Whirling Dervishes, 191
- White Island, New Zealand, 152
- Wilczek, Frank, 42
- wildfires, 28–29, 32
- William of Malmesbury, 2
- Wonderwerk Cave, South Africa, 29
- wood, tool creation, 24
- Wright, Michael, 66–68, 72, 77–78
- X-ray images, 64, 66, 69
- X-Tek, 69–70
- Yao, Xine, 120
- yawning, 112
- Yucatán jungle, ‘Ganz field’ installation, 222–227, 223
- Zhmud, Leonid, 215
- Zygalski, Henryk, 90