

# Index

- abstract particulars; *see* tropes  
actin filaments; *see* muscle contraction  
action at a distance; *see* causation, and spatiotemporal continuity  
action, intentional; *see* agency  
active causal routes, 134  
adenosine triphosphate; *see* ATP  
agency, 1, 92, 94  
Anjum, Rani Lill, 57–58  
Anomalous Monism, 21  
Armstrong, David, 88  
ATP, 199; *see also* muscle contraction  
autonomy approach, 76
- background conditions, 16, 191, 192  
backtracking; *see* counterfactual conditionals, backtracking evaluations  
bases, 81, 82, 87, 155, 159, 160, 162, 164, 165, 173, 182, 188, 204; *see also* realizers; supervenience, nomological  
Baumgartner, Michael, 148, 149, 150  
Bennett, Karen, 2, 153, 155, 167, 176, 178, 184, 186, 195, 196  
Bernstein, Sara, 172  
Block, Ned, 11  
Burge, Tyler, 75
- calcium; *see* muscle contraction  
causal graphs, 106, 107, 109, 115, 116, 120, 123, 131, 132, 133, 136, 137, 145, 146, 147  
acyclic vs non-acyclic, 107, 115, 116  
causal models, 74, 98, 101, 103, 113, 116, 117, 118, 129, 138, 140  
appropriateness, 74, 134, 136–138, 141–147  
counterfactual dependence in; *see* counterfactual dependence, in causal models  
truth of counterfactual conditionals in; *see* counterfactual conditionals, and causal models  
causal paths; *see* paths
- causal routes; *see* active causal routes  
causation  
and causal models, 105–106, 119, 124, 125, 132, 133–138, 139, 141–143, 146  
and counterfactual dependence, 4, 30–31, 50, 51, 53, 54, 56, 62, 64, 65, 69, 73, 74, 76, 77, 79, 83, 92, 95, 98, 105, 117, 118, 119, 122, 125, 132, 139, 142, 157, 161, 165, 170, 171, 173, 177, 178, 179, 188, 189, 196, 197, 198, 200  
and explanatory relevance; *see* explanatory relevance  
and intrinsic connections, 53–55, 54,  
and moral responsibility, 55  
and powers, 57–58, 94–95, 186  
and spatiotemporal continuity, 53, 55, 58  
and transference, 3, 49, 50, 51, 53, 56, 57–58, 92, 93, 139, 171, 199; *see also* causation, sufficient  
backward, 189  
contributing; *see* interventionism  
direct; *see* interventionism  
objectivity, 138, 139  
*qua*; *see* properties, causal relevance of  
relata of, 20, 147, 148  
relevance of properties to; *see* properties, causal relevance of  
simultaneous, 48, 79, 143, 188, 195  
sufficient, 184–201; *see also* causation, and transference; events, sufficient and minimally sufficient sets of  
transitivity; *see* transitivity, of causation  
centring; *see* Strong Centring  
c-fibres, 14  
Chalmers, David, 11, 17, 18  
Christensen, Jonas, 78–79, 179  
collisions, 8, 9  
conservation laws, 7–9, 9, 49, 152  
conserved quantities, 3, 49, 92; *see also* conservation laws  
content, mental, 65  
context-sensitivity, 74, 140

- counterfactual conditionals, 4, 31, 61, 88, 89, 111, 148, 171, 189, 205  
 'would' vs 'might', 32, 160, 162  
 and causal models, 98, 100, 101, 102, 103, 111, 113–115, 116, 117, 130–131, 139, 146  
 and comparative overall similarity or closeness between possible worlds; *see* possible worlds, comparative overall similarity  
 asymmetry-by-fiat approach, 40–41, 61, 64, 84, 87  
 backtracking evaluations, 39–40, 42–45, 87, 113  
 logic of, 33–38, 72, 76, 84, 117, 134, 160, 163, 204–206, 207  
 truth-conditions, 31–33, 61, 102, 190  
 vacuous truth, 31, 131, 156, 170, 178, 193, 194, 201; *see also* counterfactual conditionals, truth conditions
- counterfactual dependence, 30–31, 105, 139, 161, 163, 165, 171, 173, 177, 189, 197, 204; *see also* probabilistic dependence  
 in causal models, 104, 105–106, 117, 119, 120, 121, 123, 125, 126, 132, 135, 139, 144, 146  
 counterfactuals; *see* counterfactual conditionals  
 counterpossibles, 34; *see also* counterfactual conditionals, vacuous truth
- Dancy, Jonathan, 66  
 dark matter, 91  
 Davidson, Donald, 21,  
 defaults; *see* variables, default vs deviant values  
 Descartes, René, 6–7  
 determinism, 45–46, 102, 117, 152, 200; *see also* indeterminism  
 difference-making, 3, 4, 30, 131; *see also* counterfactual dependence  
 dispositions; *see* causation, and powers  
 dot-matrix pictures, 15–16, 62  
 double prevention, 49–58, 51, 52, 92, 93, 94, 122, 125, 128, 139, 171, 187, 188, 197–198, 199; *see also* causation, and counterfactual dependence; causation, and intrinsic connections; causation, and powers; causation, and spatiotemporal continuity; causation, and transference
- dualism, 3, 4, 11, 17, 18, 19, 22, 80, 127, 145, 155, 156, 170, 187, 192, 203  
 about substances, 6, 14; *see also* Descartes, René  
 naturalistic, 18, 19, 80, 85, 88  
 super-nomological, 88, 90, 91, 96, 118, 158, 159, 160, 164, 168, 169, 174, 182, 187, 197, 204
- early pre-emption; *see* pre-emption, early  
 Elisabeth, Princess of Bohemia, 6–7  
 energy, 3, 49, 92; *see also* conserved quantities  
 kinetic, 7, 9, 152; *see also* conservation laws
- epiphenomenalism, 10–11, 155, 187, 192, 193, 198, 203  
 equations, 101–102, 114, 116, 120, 122, 131, 144, 145, 146; *see also* causal models; counterfactual conditionals, and causal models; variables  
 acyclic vs non-acyclic, 104, 115, 116, 121, 145  
 number of solutions, 115, 116, 117, 146  
 essentiality of origin, 68  
 events, 143, 189, 196, 199, 200  
 and causal models; *see* variables  
 as property-instances, 25–28, 61, 155, 160, 161, 165  
 essential properties of, 26–28, 29, 71, 161  
 fragility, 161–165, 196  
 identity between mental and physical ones, 21–25; *see also* Anomalous Monism  
 identity conditions, 21, 28–30, 61, 71, 160  
 sufficient and minimally sufficient sets of, 189–198
- exclusion problem, 2–4, 8, 11, 22, 75, 80, 94, 151, 203  
 different formulations of, 152–154, 158, 184–185  
 explanatory relevance, 48, 55, 74–75, 138–141
- Field, Hartry, 107  
 firearms, 56  
 firing squads, 2, 3, 30, 80, 96, 152, 156, 166, 167, 171, 172, 173, 197; *see also* overdetermination  
 functionalism, 176
- Gibb, Sophie, 8, 94  
 God; *see* occasionalism  
 graphs; *see* causal graphs
- Hall, Ned, 53, 190, 191, 198  
 Halpern, Joseph, 125  
 Hitchcock, Christopher, 49, 98, 101, 119, 121, 125, 134, 142  
 Hobbes, Thomas, 10  
 Honderich, Ted, 22  
 Hüttemann, Andreas, 58  
 Huxley, Thomas, 10  
 hyperintentionality; *see* non-hyperintentionality
- identity theory; *see* physicalism, reductive  
 imagination, 91  
 indeterminism, 45–46  
 indicative conditionals, 34  
 interaction problem, 2–4, 21, 80, 203  
 interventionism, 99, 147–149  
 INUS conditions, 191; *see also* causation, sufficient; events, sufficient and minimally sufficient sets of
- Kallestrup, Jesper, 78–79, 179  
 Keaton, Douglas, 179

- Kim, Jaegwon, 11, 19, 25–28, 91, 92, 93, 95, 155
- Kistler, Max, 143
- Kment, Boris, 91
- Kripke, Saul, 11, 15, 68
- La Mettrie, Julien Offray de, 10
- late pre-emption; *see* pre-emption, late
- laws of nature, 17, 18, 78, 80, 90, 91, 117, 143, 152, 176, 179, 182, 201; *see also* conservation laws
- ‘best system’ theory of, 88
- deterministic, 42; *see also* determinism
- psychophysical, 82, 86, 87, 90, 91, 119, 152, 158, 182
- violations of; *see* miracles
- Leibniz, Gottfried Wilhelm, 7–10, 152
- Leibniz’s law, 21
- Lewis, David, 15, 28, 31–32, 44, 47, 56, 59, 88, 98, 99, 161, 166, 181, 190
- Limit Assumption, 32
- Lipton, Peter, 44
- Loewer, Barry, 85, 189
- Lowe, Jonathan, 195
- Mackie, J.L., 2, 191
- Malcolm, Norman, 11
- Malebranche, Nicolas, 9
- material biconditionals, 37
- material conditionals, 34
- materialism, 10, 11, 86; *see also* physicalism
- McDermott, Michael, 77
- McLaughlin, Brian, 179
- Menzies, Peter, 68
- Mills, Eugene, 196
- minimally sufficient sets of events; *see* events, sufficient and minimally sufficient sets of
- miracles, 41–45, 84, 85, 86, 87, 90, 158, 164, 174, 178
- big vs small, 41, 44
- psychophysical, 85, 86, 87, 88, 90, 160, 164
- modality; *see* necessity and possibility
- momentum, 7, 9, 92, 152; *see also* conserved quantities; conservation laws
- monism; *see* Anomalous Monism; physicalism
- moral particularism, 66
- multiple realizability, 11, 15, 17, 20, 146; *see also* realizers
- Mumford, Stephen, 57–58
- muscle contraction, 92–95, 93, 187–188, 198, 199
- myosin; *see* muscle contraction
- necessity and possibility
- metaphysical, 15, 34, 82
- nomological, 18, 53, 81, 82, 90, 90, 188–189, 199–201
- networks, 121, 124
- self-contained, 121, 122, 123, 124, 128, 132
- neuromuscular junction; *see* muscle contraction
- neuron diagrams, 50, 51, 54, 128, 173, 174, 197
- Ney, Alyssa, 139
- non-hyperintensionality, 37, 65, 181
- normality, 125–126, 127, 133
- occasionalism, 9–10
- omissions, 47, 48, 52, 105, 107, 119, 125, 133, 134, 139
- overdetermination, 2, 3, 4, 11, 30, 31, 49, 54, 80, 96, 152, 153, 154, 157, 164, 171, 172, 173, 174, 177, 178, 184, 185, 195
- characterizations of, 156–157, 166–167
- efficacy of overdetermining events, 167
- prototypical cases, 166, 167–171, 172, 177, 183, 197
- Papineau, David, 8
- paths, 73, 74, 75, 109, 121, 124, 132, 134, 136, 148, 149; *see also* networks
- acyclic vs cyclic, 121, 131, 134
- Paul, L.A., 190, 191, 198
- physicalism, 11, 14, 82, 86; *see also* materialism
- modal arguments against, 11, 20; *see also* zombies
- non-reductive, 3, 11, 15, 16–17, 19, 20, 22, 61, 64, 66, 75, 96, 112, 119, 127, 145, 148, 155, 158, 159, 160, 164, 168, 169, 170, 172, 174, 176, 186, 192, 203
- reductive, 2, 11, 14, 19, 20, 203
- pineal gland, 7
- possibility; *see* necessity and possibility
- possible worlds, 15, 31
- closeness; *see* possible worlds, comparative overall similarity
- comparative overall similarity, 32, 39–46, 61, 84, 89, 126, 158, 204–206
- spheres of, 88–91, 89, 90, 204–206, 205
- powers; *see* causation, and powers
- pre-emption, 54, 95, 166
- early, 98
- late, 30, 49, 77, 166
- trumping, 30
- probabilistic dependence, 46; *see also* counterfactual dependence
- properties
- (temporally) intrinsic vs (temporally) extrinsic, 46–47, 48, 142, 181–182, 188
- causal relevance of, 23–25, 67, 174
- causal vs non-causal, 67, 78–79, 179–182, 183; *see also* properties, (temporally) intrinsic vs (temporally) extrinsic
- disjunctive, 47, 65, 179, 180, 181, 183
- moral and aesthetic, 66, 67
- natural, 47

- properties (cont.)  
 particularized; *see* tropes  
 proportionality, 193  
 propositional attitudes, 47, 65  
 Putnam, Hilary, 11
- quantity of motion, 7  
 quantum entanglement, 55  
 Quine, W.V.O., 21  
 realizers, 62–63, 64, 75, 81, 82, 110, 111, 112, 113, 114,  
 126, 128, 137, 143, 149, 155, 159, 160, 162, 164,  
 165, 173, 188, 196; *see also* bases; multiple  
 realizability  
 core vs total, 78–79, 176–183, 192
- reduction; *see* physicalism, reductive  
 restricted transitivity, 36, 70; *see also*  
 counterfactual conditionals, logic of;  
 transitivity, of conditionals
- rigid designators, 15  
 Robb, David, 24–25  
 Russo, Andrew, 94, 187
- Schaffer, Jonathan, 49, 56, 92  
 Shoemaker, Sydney, 176, 179  
 social choice theory, 42  
 souls, 6, 7, 10, 11, 173  
 speed of light, 189  
 strengthening the antecedent, 37, 70;  
*see also* counterfactual conditionals,  
 logic of  
 strict conditionals, 33  
 Strong Centring, 30, 126, 190  
 structural equations; *see* equations  
 sufficient reasons, 9  
 sufficient sets of events; *see* events, sufficient and  
 minimally sufficient sets of  
 supervenience, 3  
 nomological, 17–18, 19, 80–82  
 of mental properties; *see* physicalism, non-  
 reductive; dualism, naturalistic; dualism,  
 super-nomological  
 of symmetry properties, 15–16, 62  
 strong, 15–16, 19, 62–63, 64, 66, 82, 112,  
 158  
 Swanson, Eric, 74, 139
- token events; *see* events  
 token identity theory; *see* events, identity  
 between mental and physical ones  
 transference; *see* causation, and transference;  
 double prevention
- transitivity  
 of causation, 77–78, 107, 195  
 of conditionals, 34–37, 83, 117; *see also*  
 counterfactual conditionals, logic of  
 tropes, 24–25, 91  
 tropomyosin; *see* muscle contraction  
 type causation; *see* causation, relata of  
 types vs tropes; *see* tropes
- variables, 74, 101, 112, 117, 119, 122, 134, 136, 144,  
 147; *see also* causal models; causation, relata  
 of; equations, structural  
 binary vs multi-valued, 101, 105, 106, 110, 112,  
 126, 129, 134, 135, 143–145  
 default vs deviant values, 121, 122, 123, 124,  
 126, 132; *see also* networks, self-contained  
 endogenous vs exogenous, 102, 110, 129, 142,  
 145, 146, 147  
 necessary connections between values, 141–143,  
 144, 145; *see also* causal models,  
 appropriateness  
 networks of; *see* networks
- vectors, 7  
 Vetter, Barbara, 58  
 vital spirits, 6, 7
- Woodward, James, 99, 135, 147–148, 149, 150
- Yablo, Stephen, 193
- Zhong, Lei, 75–80, 79  
 zombies, 11, 20, 90