

Index

- accessibility relation, 59–60
act utilitarianism, *see* utilitarianism, direct
Aczel, Peter, 100, 107
algorithm, 75, 76, 79, 101; *see also*
 feasibility
Anderson, C. A., 82, 86
antiextension, 106–6, 112, 115
antirealism, 89
arbitrary individual, 138, 140; *see also*
 quantification
arithmetic: epistemic, 72; justifiability of, 6,
 7, 46, 49; Peano, 14, 51, 54–7; Robinson,
 4–5, 52, 72
artificial intelligence, 132
Asher, Nicholas, 13, 64
as-if modeling, 152
Aumann, Robert, 30, 33, 63, 151
- backward induction, 26, 28
Barwise, Jon, 64, 81, 82, 95, 98, 99–101,
 104, 109–10, 125, 127, 132, 136
Bayesian conditionalization, 21, 23, 28, 29,
 36, 40, 41
Bayesian game theory, *see* game theory,
 Bayesian
Bayes's theorem, 36, 40
belief, *see* de re/de dicto distinction; doxic
 logic; doxic paradox; justifiability of
 belief; mutual belief; objects of belief;
 probability; virtual belief
Benacerraf, Paul, 72
Bicchieri, Christina, 28, 29
blindspots, 9, 23, 24, 39, 150–2
Burali-Forti paradox, 100, 160
Burge, Tyler, 53, 81, 82, 89, 95, 98, 101,
 109–10, 118–22, 132, 144, 161, 165
- calling path, 112, 145
calling relation, 101, 112, 130, 135–6, 145
Carnap, Rudolf, 63
chains, infinitely descending, 98–9, 101,
 113, 114, 118, 121–2, 146–7, 148
chain-store paradox, 2, 24, 26, 126–7, 131–2
charity, principle of, 117, 130, 144
Church, Alonzo, 48, 73, 74, 86
- Clark, Herbert H., 62, 64
closing off operation, 105, 106, 108, 134
common knowledge, 25, 41–2, 62, 162; *see*
 also mutual belief
computational feasibility, *see* feasibility
computationalism, 62–4, 69, 80, 81, 86–7
 150; *see also* representationalism
consequentialism, *see* utilitarianism
context sensitivity, 81–2, 96–7, 98–101,
 124, 131, 143, 150, 162, 163, 165
convention, 62–3
correlated equilibrium, *see* equilibrium,
 correlated
- Davidson, Donald, 63
data: degree of reliability of, 5, 65, 125, 143;
 inconsistent, 65–9; *see also* evidence
data sentences, 19, 66, 70, 75, 134
deduction, 138–40, 164
deductive closure, 6, 7, 45, 49, 138; *see also*
 logical omniscience
deductive consequence, 134, 138–9
demonstratives, 96, 111–12
denial, 85, 89–91, 100, 102
de re/de dicto distinction, 123
detached observer, 126
diagonalization, 5, 58, 59, 90; *see also*
 Gödel; self-reference
Donnellan, Keith, 89, 95
doxastic logic, *see* doxic logic
doxic logic, 58–61, 129
doxic paradox, 9, 13, 16, 19, 24, 43, 123,
 126, 128, 134, 136; *see also* paradox of
 the disprover; paradox of the knower
Dutch book theorem, 20, 50, 54
- epistemic logic, 15, 58, 61, 79–80
epistemic paradox, 13, 43; *see also* paradox
 of the disprover; paradox of the knower
epistemic situation (or state), 5, 16, 17, 19,
 47, 66, 67, 72, 74, 75, 77, 125, 126, 134,
 136, 143, *see also* data; self-evidence
equilibrium: correlated, 30, 151; mixed-
 strategy, 29, 30, 32, 33, 36; Nash, 24, 29,
 32, 62, 70, 151; weak, 31

Cambridge University Press

978-0-521-41269-8 - Paradoxes of Belief and Strategic Rationality

Robert C. Koons

Index

[More information](#)

- Etchemendy, John, 81, 82, 95, 98–101, 104, 109–10, 125, 127, 132, 136
- evidence, 16, 18–9, 23, 65; *see also* data, self-evidence
- extension, 81, 99, 112, 115, 161
- feasibility, computational, 69, 71, 72, 74, 78, 79
- Feferman, Solomon, 51, 92–5
- fixed point, 113, 114, 133, 148; minimal, 105, 106, 147
- fixed-point definition, 64
- Fodor, Jerry, 124
- formal language, 160; *see also* natural language
- foundation series, 104, 156
- four-valued truth table, 93
- Frege, Gottlob, 47
- fundamental completeness, 104, 108, 155–6
- Gaifman, Haim, 1, 2, 95, 98, 101–2, 110, 114, 116, 125, 127, 134
- game: constant-sum, 31; iterated, 24; of incomplete information, 33; *see also* chain-store paradox; prisoners' dilemma
- game theory: Bayesian, 24; noncooperative, 62, 151
- Gärdenfors, Peter, 28
- Gettier, E., 5, 62
- Gödel, Kurt, 14, 43, 44, 46, 50, 51, 54–6, 59, 67, 72, 74, 76, 150; *see also* paradox of the disprover; self-reference
- graph, directed, 112, 125–6, 135
- Grice, H. P., 62
- groundedness, semantic, 161; *see also* semantic well-foundedness
- Gupta, Anil, 89, 96–9
- Harman, Gilbert, 64
- Harsanyi, John, 33, 34
- Herzberger, H., 89
- Hintikka, Jaakko, 63
- Hodgson, D. H., 3
- ideal belief, 46, 87; *see also* justifiability of belief; probability
- ideal reasoner, 65, 67, 68, 74, 75, 78; *see also* logical omniscience; provability
- incompleteness theorem, 50–1, 54–6, 67–8, 72, 74; *see also* Gödel
- indexicality, 47, 81, 82, 96–7; *see also* context sensitivity
- indication, 65–6
- induction, 105–6, 133; *see also* backward induction
- intensional equivalence, 92
- intensional logic, 86
- intensionalism, 13, 86–8; *see also* logical omniscience; modal logic; sentential operator
- interest, principle of, 144
- interpretation of tokens, 101, 105, 141–2; *see also* proposition-assigning function
- iteration of belief, 7, 68, 69, 76
- justifiability of belief, 3–4, 6, 14, 17, 24, 27, 126, 128, 130–1, 135, 143; ultimate, 18, 66, 67, 68, 72, 74, 89; *see also* probability; rational economic man
- Kamp, Hans, 13, 64
- Kaplan, David, 43, 46, 56–7, 59–60, 64, 80, 87
- knowledge, 5, 62, 86; *see also* common knowledge; epistemic logic; paradox of the knower
- Kleene truth table, 91, 105, 108, 134
- Konolige, Kurt, 64
- Kreps, David, 29, 34, 36
- Kripke, Saul, 14, 53, 58, 63, 81, 88, 105, 116, 120, 161
- Kyburg, Henry, 6, 16
- lambda abstraction, 21
- language, *see* formal language; metalanguage; natural language; pragmatics; semantics; syntax
- levels of truth, 96, 99, 105–6; *see also* Tarskian hierarchy
- Levi, Isaac, 28
- Lewis, David, 22, 62, 64, 65, 67
- liar paradox, *see* paradox of the liar
- liar proposition, 100, 128, 161
- Lindenbaum's lemma, 60
- Löb, M. H., 43, 54, 57–8, 80
- logical closure, *see* deductive closure
- logical consequence, *see* deductive consequence
- logical consistency, 5
- logical omniscience, 5, 63, 65, 67, 69
- logical saturation of models, 105, 111
- loop, 101, 112, 114, 117, 118, 120, 121, 125, 126, 127, 129–30, 146
- lottery paradox, 6
- Lukasiewicz truth table, 91
- many-valued logic, 91–5
- Marshall, Catherine R., 62, 64
- Martin, D. A., 92, 122, 160, 164
- materialism, 150
- mathematical community, 47–9
- mathematical intuition, 48, 49, 53, 73, 90, 153; *see also* provability; self-evidence

Cambridge University Press

978-0-521-41269-8 - Paradoxes of Belief and Strategic Rationality

Robert C. Koons

Index

[More information](#)

- metalinguage, 85, 88
 metalinguistic hierarchy, 81, 85, 116; *see also* Tarskian hierarchy
 Milgrom, Robert, 29, *see also* Kreps, David
 Miller's principle, 20, 21, 37, 38, 39, 41, 50;
see also probability, second-order
 modal logic, 14, 58–61, 87; canonical
 system of, 60; normal, 59, 73;
 paradoxical, 59; *see also* semantics,
 possible-worlds; sentential operator
 modal operator, *see* sentential operator
 model: Austinian, 106; Burgean, 103, 105–9,
 111; partial, 100, 105, 111
 Montague, Richard, 13, 15, 43, 45, 46, 56–7,
 59–60, 62, 64, 80–1, 86
 Moore's paradox, 16
 mutual belief, 25, 28, 41–2, 62–72, 77–82,
 132–3, 150

 Nash equilibrium, *see* equilibrium, Nash
 natural language, 81, 88, 98–100, 116, 160;
see also sentence tokens
 necessitation, rule of, 7, 58, 90, 95
 negation, 85, 89–95, 102, 106, 128, 131
 negative noniteration, principle of, 7, 16, 80

 objects of belief, 86–7, 109, 123
 Olin, Doris, 16, 22

 paradox of the disprover, 43, 61, 85, 87,
 94–5, 125
 paradox of the knower, 7, 43, 45, 56–7,
 59–60, 80, 82, 85
 paradox of the liar, 1, 8, 9, 13, 26, 43, 58,
 64, 81, 85, 87, 100, 104, 110, 123, 125,
 149, 150; higher-order, 116, 160;
 strengthened, 89
 paradoxicality, order of, 59
 parameter, 100, 101, 102, 103, 110, 127,
 132, 142, 143
 Parsons, Charles, 81, 82, 95, 100, 132, 161–2,
 165
 Parsons, Terry, 89–91
 partial models, *see* model, partial
 payoff function, 33, 34
 Peano arithmetic, *see* arithmetic, Peano
 Perlis, Donald, 13
 plausible reasoning, 4, 7, 65–6
 pointer, 101, 110, 134
 possible worlds, *see* semantics, possible
 worlds
 pragmatics, 96–8, 110
 preface paradox, 6
 prior probability, *see* probability, prior
 prisoners' dilemma, 2, 9, 24
 probability: interval-valued, 132; of
 mathematical sentences, 48, 153–4; prior,
 22, 33, 41; rational, 20, 21, 23, 24;
 second-order, 20, 37, 39
 probability calculus, 19
 proof, 46, 47, 48, 153
 proposition: Austinian, 101–3, 127, 131,
 137–9; Burgean, 99, 101–2, 107, 165;
 expression of by a sentence token, 87,
 111, 136–7, 149, 161; individual, 87;
 inexpressible, 103, 110, 155
 proposition-assigning function, 112–3, 142
 provability: in arithmetic, 14, 51, 52, 58, 72;
 subjective, 43, 46, 72–4, 87, 154

 quantification, 87, 100, 122, 148, 162–5

 ramified type theory, *see* type theory,
 ramified
 rational credibility, *see* justifiability of
 belief; probability
 rational economic man, 4, 151
 rational maximizer, 26
 rationality, resource-bounded, 4, 69
 redundancy theory of truth, 86
 reference, definite, 62
 refutation, 90–1, *see also* denial; proof
 Regan, Donald, 3
 rejection, *see* denial
 Reny, Phillip, 28, 29
 representationalism, 62, 150, *see also*
 computationalism
 reputation, 24, 26–7, 150–2
 Rescher, Nicholas, 4, 65–6
 retaliation, 26–8
 Roberts, J., 29, *see also* Kreps, David
 Robinson arithmetic, *see* arithmetic,
 Robinson
 rootedness, semantic, 104, 121, 163;
see also semantic well-foundedness
 Rowena–Columna story, 1, 3, 5, 17, 21, 23,
 125–6, 128–9
 rule-following, 152
 Russell, Bertrand, 8, 62, 86, 87, 123, 162–3
 Russell's paradox, 8, 9

 Schiffer, Stephen, 64, 65, 67
 Schwartz, Gideon, 17
 self-evidence, 46–8, 52, 72–3, 75, 77, 90,
 153–4
 self-reference, 13, 14, 44, 50, 52, 54, 62, 65,
 85, 86, 101, 123, 125, 128, 162
 self-reference lemma, 44; *see also*
 diagonalization
 Selten, Reinhard, 2, 24, 26
 semantic well-foundedness, 104, 108, 109,
 155–6

Cambridge University Press

978-0-521-41269-8 - Paradoxes of Belief and Strategic Rationality

Robert C. Koons

Index

[More information](#)

- semantics, 88; possible worlds, 14, 63, 86, 123; *see also* pragmatics; syntax
 sense, Fregean, 86–7
 sentence tokens, 85, 96, 99, 101, 111, 113, 161; anchored, 117, 121–2; maximal, 117, 134, 144
 sentence types, 85, 99–100, 111
 sentential operator, 13, 87–8, *see also* intensionalism; modal logic
 set theory, 102, 123, 148, 161–2; non-well-founded, 100, 107, 123
 Shubik, Martin, 32
 situation, 102–3, 127, 137; actual, 103; Burgean, 108, 155–6; possible, 141
 Sobel, J. H., 32
 social science, 151–2
 Sorensen, Roy, 22, 24, 39
 states of affairs (soa's), 102–3, 137–8
 strategy: centroid, 31; dominated, 70–1; mixed, 24; noncentroid, 24, 29, 30, 34, 36; pure, 29
 strengthened liar, *see* paradox of the liar
 structural isomorphism, 140–1
 subjective probability, *see* probability
 subjective provability, *see* provability, subjective
 subjunctive conditional, 27, 36, 127
 substitution, 13
 subtoken, 124–5, 131, 134
 surprise quiz paradox, 16, 22
 symmetry, principle of, 144
 syntax, 43, 44
 Tarski, Alfred, 1, 44, 59, 64, 85, 87, 163
 Tarskian hierarchy, 81, 85, 99, 116, 133, 161–2
 Thomason, Richmond, 13, 14, 15, 43, 45, 52, 55, 59, 81, 86
 thought, language of, 124, 137
 thought tokens, 124, 142, 144–5
 three-valued truth table, 91
 tokens, *see* sentence tokens; thought tokens
 truth, *see* many-valued logic; paradox of the liar; redundancy theory of truth; truth-value gaps
 truth tables, *see* four-valued truth table; Kleene truth table; three-valued truth table
 truth-teller proposition, 104
 truth-value gaps, 88–9, 98, 114, 127, 135
 Turing machine, 75
 type-free theory, 92
 type theory, ramified, 62, 86, 162
 universe of discourse, 102, 111, 160; *see also* quantification
 Ur-model, 140, 143
 Ushenko, A. P., 95
 utilitarianism: direct, 25, 151; indirect, 151–2
 utility, 33, 34
 Van Fraassen, Bas, 20
 virtual belief, 71–7, 132–3
 warrant, 65; *see also* data; evidence
 weak equilibrium, *see* equilibrium, weak
 Wilson, Robert, 29; *see also* Kreps, David