

Contents

1	Seven Paradoxes	1
1.1	The Doomsday Argument	1
1.2	The Betting Crowd	2
1.3	The Simulation Argument	2
1.4	Newcomb's Problem	2
1.5	The Open Box Game	3
1.6	The Hadron Collider Card Experiment	3
1.7	The Two-Envelopes Paradox	3
	References	4
 Part I Anthropic Fallacies		
2	DOOMSDAY!	7
2.1	Randomness in Reference Class	8
2.2	Retrocausality	9
	References	10
3	The Betting Crowd	11
3.1	Randomness and Reference Class	12
3.2	Retrocausality	13
	Reference	13
4	The Simulation Argument	15
4.1	Randomness and Reference Class	15
4.2	Retrocausality	16
4.3	Summary	17
	References	17

Part II Dilemmas of Cooperation

5	Newcomb's Problem	21
5.1	Preliminaries	21
5.2	Three Problems, Four Theories	22
5.3	Correlation	25
5.4	Advisors	26
5.5	Coherence	30
5.6	The Perils of Incoherence	33
	References	34
6	The Open Box Game	35
7	The Hadron Collider Card Experiment	39
7.1	Another Open Box Game	40
	References	44

Part III Mystifying Envelopes

8	The Two-Envelopes Problem	47
8.1	Opening the Envelope	48
8.2	How to Play	55
8.3	Summary	58
	References	58
9	Odds and Ends	59
9.1	Doomsday	59
9.2	The Betting Crowd	61
9.3	Sims	61
9.4	Newcomb's Problem	62
9.4.1	Alternatives to Advisors	62
9.4.2	The Consequence of Randomization	63
9.4.3	Liebnitzian Lethargy	64
9.4.4	Coherence Implies Stability	65
9.5	Is the Card Game at all Feasible?	66
9.6	Two Envelopes	67
9.6.1	Additional Approaches?	67
9.6.2	Causal Structure	70
9.6.3	The Finite Two-Envelopes Game	71
9.6.4	Ross's Theorem	72
	References	73

Contents	xi
Epilogue: Anthropic Eden	75
Index	77

Paradoxes in Probability Theory

Eckhardt, W.

2013, XV, 79 p. 5 illus., Softcover

ISBN: 978-94-007-5139-2