Cambridge University Press & Assessment 978-0-521-87188-4 — Evidence and Evolution Elliott Sober Table of Contents <u>More Information</u>

Contents

List of figures preface Acknowledgements			<i>page</i> ix xv xix
1	Evide	nce	1
	1.1	Royall's three questions	3
	1.2	The ABCs of Bayesianism	8
	1.3	Likelihoodism	32
	1.4	Frequentism I: Significance tests and probabilistic modus tollens	48
	1.5	Frequentism II: Neyman-Pearson hypothesis testing	58
	1.6	A test case: Stopping rules	72
	1.7	Frequentism III: Model-selection theory	78
	1.8	A second test case: Reasoning about coincidences	104
	1.9	Concluding comments	107
2	Intelligent design		109
	2.1	Darwin and intelligent design	109
	2.2	Design arguments and the birth of probability theory	113
	2.3	William Paley: The stone, the watch, and the eye	118
	2.4	From probabilities to likelihoods	120
	2.5	Epicureanism and Darwin's theory	122
	2.6	Three reactions to Paley's design argument	125
	2.7	The no-designer-worth-his-salt objection to the hypothesis	
		of intelligent design	126
	2.8	Popper's criterion of falsifiability	129
	2.9	Sharpening the likelihood argument	131
	2.10	The principle of total evidence	136
	2.11	Some strengths of the likelihood formulation of the design argumen	t 139

Cambridge University Press & Assessment 978-0-521-87188-4 — Evidence and Evolution Elliott Sober Table of Contents <u>More Information</u>

viii Contents		
2.12	The Achilles heel of the likelihood argument	141
2.13	Paley's stone	147
2.14	Testability	148
2.15	The relationship of the organismic design argument to Darwinism	154
2.16	The relationship of Paley's design argument to contemporary	
	intelligent-design theory	154
2.17	The relationship of the design argument to the argument from evil	164
2.18	The design argument as an inductive sampling argument	167
2.19	Model selection and intelligent design	177
2.20	The politics and legal status of the intelligent-design hypothesis	184
2.21	Darwinism, theism, and religion	186
2.22	2 A prediction	188
3 Natu	ral selection	189
3.1	Selection plus drift (SPD) versus pure drift (PD)	192
3.2	Comparing the likelihoods of the SPD and PD hypotheses	199
3.3	Filling in the blanks	201
3.4	What if the fitness function of the SPD hypothesis contains a valley?	212
3.5	Selection versus drift for a dichotomous character	215
3.6	A breath of fresh air: Change the explanandum	219
3.7	Model selection and unification	226
3.8	Reichenbach's principle of the common cause	230
3.9	Testing selection against drift with molecular data	235
3.10	Selection versus phylogenetic inertia	243
3.11	The chronological test	253
3.12	2 Concluding comments	261
4 Com	mon ancestry	264
4.1	Modus Darwin	265
4.2	What the common ancestry hypothesis asserts	268
4.3	A Bayesian decomposition	275
4.4	A single character: Species matching and species mismatching	277
4.5	More than one character	294
4.6	Concluding comments on the evidential significance of similarity	310
4.7	Evidence other than similarity	314
4.8	Phylogenetic inference: The contest between likelihood and cladistic parsimony	332
C 1		252
Conclusion		
Biolography		
Index		