

Contents

<i>Acknowledgments</i>	<i>page x</i>
Introduction	1
1 A history of parsimony in thin slices (from Aristotle to Morgan)	4
The naming ceremony	4
Aristotle's principle that nature does nothing in vain	6
How Ockham wields his razor	9
Geocentric and heliocentric astronomy	12
Descartes and Leibniz on God and the laws of nature	22
Descartes's derivations	24
Leibniz on the best of all possible worlds	26
Newton on avoiding the luxury of superfluous causes	33
Hume on the principle of the uniformity of nature	37
Kant's demotion of God	40
Whewell's consilience of inductions	44
Mill tries to cut the razor down to size	49
James Clerk Maxwell, the evangelical physicist	50
Morgan's canon	51
Concluding comments	58
2 The probabilistic turn	61
Two philosophies of probability	61
A probability primer and the basics of Bayesianism	64
Ockham's razor for Bayesians	84
Two kinds of prior probability	85
Jeffreys's simplicity postulate	87
Popper's objection to Jeffreys's postulate	91

Popper, falsifiability, and corroboration	93
Popper's characterization of simplicity	97
Parsimony and non-first priors	99
Likelihoods and common causes	102
On similarity	119
A three-way Reichenbachian distinction	120
Bayesian Ockham's razor	123
Frequentism and adjustable parameters	128
How many causes for a single effect?	135
Bayesian model selection	138
The world of model selection	140
How the two parsimony paradigms differ	141
Why a false model can be more predictively accurate (and closer to the truth) than a true one	145
What the two parsimony paradigms have in common	147
Concluding comments	148
3 Parsimony in evolutionary biology - phylogenetic inference	153
Common ancestry	154
Some history	162
Ockham meets Markov	169
Two models that entail mirroring	176
Symplesiomorphies	178
The Smith/Quackdoodle theorem	180
Estimating character states of ancestors - two examples in which mirroring fails	181
Another criterion - statistical consistency	184
Still another criterion - when is parsimony more reliable than guessing?	188
Forwards and backwards	189
Estimating the character state of a leaf - anthropomorphism and comparative psychology	190
Parsimony old and new	197
Concluding comments	197
Appendices	200
4 Parsimony in psychology - chimpanzee mind-reading	207
Experiments	209
Conflicting interpretations	212

Whiten's arrows	215
The two parsimony paradigms	217
Lessons from the blackbox	221
A different mind-reading model that also entails no screening-off	226
Learning and screening-off	227
Associations, correlations, and testing	229
Parsimony redux	231
A cross-chimpanzee comparison that is not about screening-off	232
Behaviorism versus mentalism	234
Concluding comments	239
5 Parsimony in philosophy	244
Naturalisms	244
Atheism and the problem of evil	246
Absence of evidence and evidence of absence	252
The mind/body problem	253
The causal efficacy of the mental	260
Moral realism	264
Misinterpreting screening-off	268
Nominalism and Platonism about mathematics	272
Solipsism	276
The problem of induction	283
Concluding comments	286
<i>References</i>	291
<i>Index</i>	309