

CONTENTS

Preface for students: a guide to studying human evolution	viii
Acknowledgments	xi
PART 1 THE FRAMEWORK OF HUMAN EVOLUTION	1
Chapter 1 The growth of the evolutionary perspective	3
Our place in nature	3
Establishing the link between humans and apes:	
historical views	9
Human evolution as narrative and as explanation	16
Chapter 2 The principles of evolutionary theory	27
The fundamentals of evolutionary theory	27
Modern evolutionary theory: the development of	
Neo-Darwinism and the power of natural selection	34
Chapter 3 Pattern and process in evolution	46
From micro- to macroevolution: debates in modern	
evolutionary theory	46
The physical context of evolution	55
Extinction and patterns of evolution	73
Chapter 4 The geological context	84
Dating methods	84
The science of burial	94

Chapter 5 The systematic context	101
Systematics	101
Molecular systematics	116
Chapter 6 Human evolution in comparative perspective	126
Primate heritage	127
The comparative perspective	140
Bodies, size, and shape	143
Bodies, brains, and energy	154
Chapter 7 Reconstructing behavior	164
Bodies, behavior, and social structure	164
Non-human models of early hominin behavior	173
Jaws and teeth	184
PART 2 EARLY HOMININ EVOLUTION	193
Chapter 8 Apes, hominins, and humans: morphology, molecules, and fossils	195
Morphology and molecules: a history of conflict	196
Evolution of the catarrhines: the context of hominin origin	212
Chapter 9 Searching for the first hominins	228
The earliest hominins	228
Bipedalism	240
Chapter 10 The apelike hominins	255
The australopithecines	255
Chapter 11 Origins of <i>Homo</i>	284
The genus <i>Homo</i>	284
Hominin relationships	296
Chapter 12 Behavior and evolution of early hominins	308
Early tool technologies	308
The pattern of early hominin evolution	320
Chapter 13 Africa and beyond: the evolution of <i>Homo</i>	331
Evolutionary patterns	332
New technologies	346
Hunter or scavenger?	351

PART 3 LATER HOMININ EVOLUTION 363

Chapter 14 The origin of modern humans: background and fossil evidence 365

- Background for the evolution of modern humans 366
- Competing hypotheses for modern human origins 372
- Chronological evidence 375
- The question of regional continuity 377
- The place of Neanderthals in human evolution 394

Chapter 15 The origin of modern humans: genetic evidence 400

- The impact of molecular evolutionary genetics 400
- Recent developments 409

Chapter 16 The origin of modern humans: archeology, behavior, and evolutionary process 422

- Archeological evidence 423
- Regional patterns in the archeology 431
- Toward an integrated model of modern human origins 440

Chapter 17 Evolution of the brain, intelligence, and culture 447

- Encephalization 448
- Cultural evolution 458

Chapter 18 Language and symbolism 464

- The evolution of language 464
- Art in prehistory 474

Chapter 19 New worlds, old worlds 488

- Completing colonization 490
- The first villagers 500
- The human evolutionary heritage 510

References 513

Index 532