

Preface

This text is an abridged and slightly rewritten version of the third edition of *The Human Species: An Introduction to Biological Anthropology*. Why a brief version of another textbook? No single textbook can accommodate perfectly all the different ways in which an introductory course in biological/physical anthropology is taught. Instructors vary in terms of their interests, use of supplemental materials, and allotted time for their courses. This text will serve several audiences for which the larger version might not be as appropriate. First, a shorter text may be more useful for those teaching on a quarter system. Second, some instructors like to assign supplemental readings, and a shorter text suits this arrangement. Third, some instructors prefer texts with less detail than traditional introductory texts; this text fills that need. Finally, the shorter length of this text makes it suitable as one of several texts for courses such as a basic introduction to anthropology or a combined physical anthropology and archaeology course.

This text introduces the field of biological anthropology (also known as physical anthropology), the science concerned with human biological origins, evolution, and variation. The text addresses the major questions that concern biological anthropologists: "What are humans?", "How are we similar to and different from other animals?", "Where are our origins?", "How did we evolve?", "Are we still evolving?", "How are we different from one another?", and "What does the future hold for the human species?"

Organization

The book is divided into four parts. Part One, "Evolutionary Background," gives readers the grounding they will need in genetics and evolutionary theory to better understand the remainder of the text. Chapter 1 begins with an overview of anthropology and biological anthropology and discusses the scientific method as it relates to evolution. A brief history of evolutionary science and a discussion of the "creation-evolution" debate conclude the chapter.

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Chapter 2 reviews molecular and Mendelian genetics as applied to humans in order to provide genetic background for later chapters. It includes a basic review of cell biology. Chapter 3 covers microevolution and macroevolution.

Part Two addresses "Our Place in Nature," specifically the biology, behavior, and evolution of primates. A main focus of this section is the questions "What are humans?" and "How are we related to other living creatures?" Chapter 4 examines issues in classification and looks at the basic biology and behavior of mammals in general, and primates in particular. This chapter also evaluates the different types of primates in terms of classification, biology, and behavior, with particular attention given to our close relatives, the apes. Chapter 5 looks specifically at the human species and includes a comparison of human traits with those of apes. Chapter 6 examines the fossil record for evolution, looking at dating methods and other techniques of fossil analysis and includes a brief summary of the evolution of life prior to the origin of primates. Chapter 6 concludes with an overview of the major events of primate origins and evolution, from the time of the disappearance of the dinosaurs 65 million years ago to the split of ape and human lines 5–7 million years ago.

Part Three devotes three chapters to "Human Evolution." Chapter 7 begins with a brief review of human evolutionary history and follows with a detailed summary of the first hominids, the australopithecines, and the emergence of the genus *Homo* characterized by a larger brain and the advent of stone tool technology. Chapter 8 examines the continued biological and cultural evolution of the genus *Homo*. Chapter 9 looks at the fossil and archaeological evidence for the origin of modern humans and includes a discussion of current controversies (Did modern humans evolve throughout the world, or are our recent ancestors exclusively from Africa?).

Part Four focuses on "Human Variation," with an emphasis on understanding how modern peoples differ from one another and why. This section also looks at the way the human species continues to evolve, both biologically and culturally. Chapter 10 examines different ways we measure human variation and contrasts racial and evolutionary approaches to variation. Chapter 11 provides a number of case studies of microevolution and adaptation in modern and recent human populations. Chapter 12 explores the evolution of patterns of human health and disease in our evolutionary past and in today's world, as well as changes in the demographic structure of human populations.

Not all instructors will use the same sequence of chapters. Some may prefer a different arrangement of topics. I have attempted to write chapters in such a way as to accommodate such changes whenever possible. For example, some instructors may prefer to cover human variation before the sections on primates and human evolution. In that case, a sequence of Parts One, Four, Two, and Three would work well.

Features

Throughout the text, I have attempted to provide new material relevant to the field and fresh treatments of traditional material. Key features include:

- *All areas of contemporary biological anthropology are covered.* In addition to traditional coverage of areas such as genetics, evolutionary theory, primate behavior, and the fossil record, the text includes material often neglected in introductory texts, such as human health and disease and demography. In addition, the study of human growth is incorporated into several chapters.
- *The relationship between biology and culture is a major focus.* The biocultural framework is introduced in the first chapter and integrated throughout the text.
- *Behavior is discussed in an evolutionary context.* The evolutionary nature of primate and human behavior is emphasized in a number of chapters, including those on primate biology and behavior (4–6) and the fossil record of human evolution (7–9).
- *The emphasis is on the human species in its context within the primate order.* Discussions of mammals and nonhuman primates continually refer back to their potential relevance for understanding the human species. In fact, a separate chapter on the biology and behavior of the human species written from a comparative perspective has been added to this edition.
- *Hypothesis testing is emphasized.* From the first chapter, where students are introduced to the scientific method, I emphasize how various hypotheses are tested. Rather than provide a dogmatic approach with all the “right” answers, the text examines evidence in the context of hypothesis testing. With this emphasis, readers can see how new data can lead to changes in basic models and can better understand the “big picture” of biological anthropology.

New to This Edition

Every chapter has been carefully revised in light of new findings in the field and comments from users of the second edition. In fact, a number of chapters have been re-ordered, added, and merged or deleted based on the helpful feedback I received from colleagues. To make the text as clear, accessible, and up-to-date as possible, I’ve made the following specific changes:

- Each chapter now includes one or more boxes that focuses on a “Special Topic.” Some of the topics focus on contemporary issues (for example, “The Coming Plague?”), some on historical issues (for example, “The Piltdown Hoax”), and some on a wide range of other subjects (for example, “Science Fiction and Orthogenesis”).