

Preface

TO THE INSTRUCTOR

We are part of a dynamic, fast-changing field. Biological anthropologists are making exciting discoveries that change the way we view ourselves today, our past, and our future as a species, and my goal in writing this book is to convey this excitement to students. For this reason, this book and its accompanying media package have some highly innovative features:

- ▲ **Focus on critical thinking and the scientific process:** To understand science, students must understand how scientists develop new knowledge, what new knowledge is valid, and what remains to be discovered. In other words, they need to understand what science is and how biological anthropologists “do” science. This is the focus of this book. The Introduction and early chapters focus on the process of discovery—not just what we know, but how we know it. So we explore how scientific discovery builds on earlier knowledge (Introduction, Chapter 1). I don’t just tell the student about Darwin’s theory of natural selection; I explain how Darwin built on earlier knowledge to form a unified and cohesive explanation for how life evolved (Chapter 2).
- ▲ **Focus on relevance:** Biological anthropology is not a stuffy, academic discipline—its discoveries about genetics, human evolution, and human variation are vitally relevant to students’ lives. So each chapter begins with an example, taken from the headlines, of an important question biological anthropologists have asked or answered: How do steroids affect athletes (Chapter 3)? What do discoveries about primate culture tell us about what makes humans unique (Chapter 8)? Why did the Census Bureau change the categories it uses to categorize people by “race” (Chapter 10)?
- ▲ **Focus on humanity’s place in the natural world:** As a biological anthropologist and primatologist, I focus in this book on humans as a part of the primate order. Chapter 3 contains a review of human anatomy and biology, a chapter unique among introductory texts but extremely important to students’ understanding of human evolution and variation. Chapter 5 discusses human behavioral ecology in the context of primate behavior. Chapters 7 through 9 present an overview of human evolution in the context of the evolution of the entire primate order. Chapter 11 explains that humans are still evolving and speculates on what this means for global ecology. My goal is to give students a wide perspective on what it means to be human and to help them think critically about important issues that face all of humanity.
- ▲ **Focus on interactive media:** Today’s students think of textbooks as just one way to learn. They expect to make extensive use of other media as

well. Therefore, I have made the Web an integral part of my book. The companion Web site, accessed at www.fuenteslab.com, is much more than a static collection of study questions and outlines. It contains interactive exercises that help students understand what biological anthropologists do (students will have an opportunity to classify and identify fossil finds, observe primates in the wild, and build a protein from amino acids, among many other activities), as well as videos, slide shows, Web links, and critical-thinking exercises. Instructors will find the Virtual Lab a valuable resource for course materials and assignments.

How is this book organized?

This book is organized into an Introduction and 11 chapters, each with accompanying Web site materials. The Introduction, set up as a series of FAQs ("How old is the planet?" "Have humans changed over time?" "Where does modern science come from?") presents background information students need but do not always have access to. Chapters 1 through 4 introduce students to the field of anthropology, the science of biological anthropology, Darwinian evolution, human biology, and the modern evolutionary synthesis.

Chapter 5 is a uniquely fascinating introduction to primate behavioral ecology, written from the point of view of a working primatologist. Chapters 6 through 9 survey human evolution from the earliest mammals through *Homo sapiens*. Chapter 10 surveys human variation, and chapter 11 puts it all together by speculating on how humans are continuing to evolve.

Special features help students learn

This book has a number of unique pedagogical features that will engage students, help them learn, and foster critical thinking. These include engaging, timely chapter-opening **vignettes** that show the relevance of the chapter's contents to the students' daily lives; frequent links to material in the **Virtual Lab**; an extensive, innovative **illustration program** that is sure to appeal to today's visual learners; a **marginal glossary**; a lively, conversational writing style; and extensive **end-of-chapter learning aids**.

At the end of each chapter, students will find a summary of key points, a glossary, a list of resources, and a list of citations. They will also find a unique critical-thinking feature, *What We Know/Questions That Remain*. This feature summarizes key knowledge presented in the chapter and highlights the most important questions that remain to be answered. It will help students see that science is an ongoing process and that our current state of

knowledge is subject to change. Most importantly, it demonstrates the exciting nature of ongoing research in biological anthropology.

Ancillaries

FOR THE INSTRUCTOR

Instructor's Resource CD-ROM—a single CD with an easy-to-use interface providing access to a wide array of important instructor tools, including the Instructor's Manual, Testbank, Computerized Testbank, and PowerPoint slides.

FOR THE STUDENT

Online Learning Center Web site, accessed at www.fuenteslab.com, features a free comprehensive Interactive Study Guide including chapter outlines, chapter summaries, chapter quizzes with feedback and instructor reporting, plus PowerWeb—password-protected online access to articles from the popular and scholarly press, weekly updates, daily newsfeeds, and a search engine. In addition, students will have access to Virtual Explorations and Interactivities that harness the power of the World Wide Web to go beyond basic information and explore both current and classic research. Taking advantage of the way today's students learn—through multimedia—the Web site allows students many opportunities to exercise their critical thinking skills, conduct research, investigate up-to-the-minute findings, and “do” biological anthropology on their own.

The Web site also provides you with many opportunities for innovative classes and assignments. Each chapter's activities include numerous quizzes, research ideas, and essay topics. We invite you to explore it on your own or with your students.

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Any and all mistakes and inefficiencies in this text are my responsibility.

TO THE STUDENT

Read this section!

This is not just some general introduction to the book. This section contains an explanation of this text, tips on how to best use it, and information you'll need to know before plunging ahead into the formal chapters.

WHY THIS BOOK?

I am a firm believer in the incredible importance of anthropology, not just in school but in our everyday lives (I've even made a career out of it). Introductory biological anthropology classes, like the one this text is written for, are packed with information that is directly relevant to all of us and should be both interesting and exciting. For example, in this text you will learn why humans' heads will not grow any larger in the future, how DNA works and does not work, and why the "survival of the fittest" is not what evolution is about. Unfortunately, almost by definition, most textbooks don't inspire the page turning tension of a great novel, the mesmerizing attraction of a new video game, or even the dull but enticing watchability of a TV rerun. This book probably won't reach any of those heights by itself either. But, if you give it a shot it might actually pay off for you. I hope that the way that this book is structured, combined with its media package, will get you the information you need and even stimulate some interest in the really amazing knowledge that lies within.

This text and its accompanying media package are different from other course materials you are familiar with. How? First, they focus on a limited number of vital core concepts that are presented in a straightforward manner. I tried to write in a way that makes reading this book a little more enjoyable than the average text. Second, the text and its accompanying Web site are seamlessly integrated to give you the full benefit of technology to aid your learning and to give you access to the vast amount of material available on the Web. We have put together a media package that complements the core information and lets you explore on your own. Our goal is for you to think about, assess, and use the information presented, not just take it, memorize it, and spew it back on a test. Hopefully, you'll even have a reasonably good time using this book and the Interactive Anthropology media component.

USING THIS TEXT

This text and Web site have many levels. The way that information is distributed lets you decide how deeply you want to explore any specific subject. If you just read the textbook pages assigned by your instructor and look at the illustrations, you will learn the core concepts. However, the more carefully and critically you read, and the more you use the Web site, the more you'll get out of this course. Take the time to read carefully and it will pay off. If you then want to know even more, go into more detail, and get a wider overview of the issues, use the Web site. This includes videos, Web links, graphics, visual reviews, and interactive learning activities that let you take the core concepts and expand on them, bettering your understanding and getting more than just enough information to pass the class. The Web site will give you a taste of what real anthropologists do; for example, you'll have a chance to classify fossils, identify species, and observe live primates in the field.

The basic level of this book is the structure of the chapters. Each chapter starts with a brief example that shows the practical relevance of the material covered. For example, what can a famous hoax teach us about evaluating the significance of fossil finds? What is the practical significance of genetic research? How will the overuse of antibiotics affect our health? Then comes the chapter text, with the information, figures, diagrams and key terms. Following is a summary and a review of what we do and do not know about the chapter's material. At the end of each chapter you'll find a unique feature, *What We Know/Questions That Remain*, that allows you to see what areas scientists are working on and how new knowledge links to what we already know. There are also critical thinking questions that ask you to synthesize what you have learned and really think about it. Finally the chapter closes with a glossary, set of recommended readings, a list of multimedia resources, and the bibliography of cited sources.

The textbook provides basic information; the Web site goes beyond. Throughout the book you'll see icons that direct you to the Web site for a more in-depth discussion or examples of the topics being covered. Use these media components to increase your knowledge, to test your grasp of the material, and just to look at the videos, images and graphics a few extra times. Much of what we cover in this course is visual in nature. Take advantage of the access that the media packet gives you. You can also use the Web links to learn more about the topics covered in the text and to see the latest scientific developments.

I hope that by the end of this book you'll have benefited from its format and content. I appreciate any feedback on the structure and readability of this

book and other comments you might have. After you've finished the book, I invite you to e-mail me with comments or questions at afuentes@nd.edu.

WHAT ARE THE BENEFITS OF THE WEB AND ONLINE INFORMATION?

The World Wide Web is all around us. You can find information about almost anything on the Web. However, it is not a replacement for a library or a book. Because of the freedom and ease of posting a Web page, there is little to no content control, so many Web sites are unreliable. The Web sites we'll refer you to in this text are those that I have checked and reviewed and that offer accountability (in other words, you can tell that the information comes from a reliable source).

A great benefit of the Web is the sheer amount of information it contains, but along with size comes the need to narrow down the amount of information available. For example, if you type the word "genetics" into the Google search engine, you get over 109,000,000 hits! There are too many facts, too much information, and too many opinions regarding issues and topics related to biological anthropology on the Web. Therefore, it's important to learn how to use the Web critically, and we focus on that in this book and the companion Web site. We'll start with some tips on how best to use the Web for research:

- ▲ **Authorship.** Always look to see if the site you are visiting clearly states who posted it, where the information has come from, and if they offer an e-mail addresses for contacts and questions. A Web address that includes the name of a recognizable college or university, government agency, or research organization suggests that the information is reliable.
- ▲ **Purpose.** Is the site promoting a specific agenda (such as creationism), or is it informational? Use critical reading skills (discussed in Chapter 1) to decide.
- ▲ **Sources.** If someone has posted information and does not let you know how he/she got the information, then it might be suspect. Remember that there is no penalty for lying on the Web. Just because it is in print, or has nifty graphics, does not make it true.