

WINDOW on
HUMANITY

A Concise Introduction to Anthropology

Sixth Edition

CONRAD PHILLIP KOTTAK

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Conrad Phillip Kottak

University of Michigan





WINDOW ON HUMANITY: A CONCISE INTRODUCTION TO ANTHROPOLOGY, SIXTH EDITION

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This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 0 DOC/DOC 1 0 9 8 7 6 5 4 3

ISBN 978-0-07-803508-1

MHID 0-07-803508-2

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Typeface: *10/12 Times*
Compositor: *Aptara[®], Inc.*
Printer: *R. R. Donnelley*

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Library of Congress Cataloging-in-Publication Data

Kottak, Conrad Phillip.

Window on humanity : a concise introduction to anthropology / Conrad Phillip Kottak, University of Michigan. — Sixth edition.

p. cm.

Includes index.

ISBN-13: 978-0-07-803508-1

ISBN-10: 0-07-803508-2

1. Anthropology. I. Title.

GN25.K68 2014

301—dc23

2013016665

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To my wife,
Isabel Wagley Kottak

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Preface

Window on Humanity is intended to provide a concise, readable, lower-cost introduction to general (four-field) anthropology. The combination of shorter length and lower cost increases the instructor's options for assigning additional reading—case studies, readers, and other supplements—in a semester course. *Window* also can work well in a quarter system, for which traditional texts may be too long.

As a college student, I was drawn to anthropology by its breadth and because of what it could tell me about the human condition, present and past. I've been very fortunate to spend my teaching career at a university (the University of Michigan) that values and unites anthropology's four subfields. I enjoy my contact with members of all those subfields, and by teaching and writing for the four-field introductory course, I'm happy to keep up with those subfields. Anthropology has compiled an impressive body of knowledge about human diversity, which I'm eager to introduce in the pages that follow. I believe strongly in anthropology's capacity to enlighten and inform. Anthropology's subject matter is intrinsically fascinating, and its focus on diversity helps students understand their fellow human beings in an increasingly interconnected world and an increasingly diverse North America.

I wrote my first textbook at a time when there were far fewer introductory anthropology texts than there are today. The texts back then tended to be overly encyclopedic. I found them too long and too unfocused for my course and my image of contemporary anthropology. The field of anthropology was changing rapidly. Anthropologists were writing about a “new archaeology” and a “new ethnography.” Fresh fossil finds and biochemical studies were challenging our understanding of human and primate evolution. Studies of monkeys and apes in their natural settings were complementing conclusions based on work in zoos. Studies of language as it actually is used in society were revolutionizing formal and static linguistic models. In cultural anthropology, symbolic and interpretive approaches were joining ecological and materialist ones.

Today there are new issues and approaches, such as molecular anthropology and new forms of spatial and historical analysis. The fossil and archaeological records expand every day. Profound changes have affected the people and societies anthropologists traditionally have studied. In cultural anthropology it's increasingly difficult to know when to write in the present tense and when to write in the past tense. Anthropology hasn't lost its excitement. Yet many texts ignore change—except maybe with a chapter tacked on at the end—and are written as though anthropology and the people it studies were the same as they were a generation ago. While any competent anthropology text must present anthropology's core, it also should demonstrate anthropology's relevance to today's globalized world. *Window on Humanity* has been written to present that relevance in clear and simple terms to the beginning student.

Goals

In writing this book, I've been guided by three main goals. First, I wanted to provide a concise, up-to-date, lower-cost, four-field introduction to anthropology. Anthropology

is a science—a “systematic field of study or body of knowledge that aims, through experiment, observation, and deduction, to produce reliable explanations of phenomena, with reference to the material and physical world” (*Webster’s New World Encyclopedia* 1993, p. 937). Anthropology is a humanistic science devoted to discovering, describing, and explaining similarities and differences in time and space. In *Mirror for Man*, one of the first books I ever read in anthropology, I was impressed by Clyde Kluckhohn’s (1944) description of anthropology as “the science of human similarities and differences” (p. 9). Kluckhohn’s statement of the need for such a field still stands: “Anthropology provides a scientific basis for dealing with the crucial dilemma of the world today: how can peoples of different appearance, mutually unintelligible languages, and dissimilar ways of life get along peaceably together?” (p. 9).

Anthropology is a science with clear links to the humanities, as it brings a comparative and cross-cultural perspective to forms of creative expression. One might even say that anthropology is among the most humanistic academic fields because of its fundamental respect for human diversity. Anthropologists routinely listen to, record, and attempt to represent voices and perspectives from a multitude of times, places, nations, and cultures. Through its four subfields, anthropology brings together biological, social, cultural, linguistic, and historical approaches. Multiple and diverse perspectives offer a fuller understanding of what it means to be human than is provided by academic fields that lack anthropology’s broad vision and cross-cultural approach.

My second goal was to write a book that would be good for students. My book would be user-friendly in layout, writing style, approach, and pedagogy. By discussing current events and popular culture in relation to anthropology’s core, it would show students how anthropology relates to their own lives and experiences. Throughout this book I’ve attempted to be fair and objective in covering various and sometimes diverging approaches, but I make my own views known and write in the first person when it seems appropriate. I’ve heard colleagues who have used other textbooks complain that some authors seem so intent on presenting every conceivable position on an issue that students are bewildered by the array of possibilities. Anthropology should not be made so complicated that it is impossible for beginning students to appreciate and understand it. The textbook author, like the instructor, must be able to guide the student.

My third goal was to write a book that professors, as well as students, would find useful and appreciate. Accordingly, *Window on Humanity* covers basics and core concepts while also discussing prominent current interests, such as globalization and its effects on the people anthropologists study.

Content and Organization

No single or monolithic theoretical perspective orients this book. My e-mail, along with reviewers’ comments, confirms that instructors with a very wide range of views and approaches have been pleased with *Window* as a teaching tool.

In Chapter 1, anthropology is introduced as an integrated four-field discipline, with academic and applied dimensions, that examines human biological and cultural diversity in time and space. Anthropology is discussed as a comparative and holistic science, featuring biological, social, cultural, linguistic, humanistic, and historical approaches. Chapter 2 examines the central anthropological concept of culture, including its symbolic and adaptive features. Chapter 3 is about doing anthropology—the methods and ethics of research in anthropology’s subfields.

The chapters focusing on physical anthropology and archaeology (4–9) offer up-to-date answers to several key questions: When did humans originate, and how did we become what we are? What role do genes, the environment, society, and culture play in human variation and diversity? What can we tell about our origins and nature from the study of our nearest relatives—nonhuman primates? When and how did the primates originate? What key features of their early adaptations are still basic to our abilities, behavior, and perceptions? How did hominids develop from our primate ancestors? When, where, and how did the first hominins emerge and expand? What about the earliest real humans? How do we explain biological diversity in our own species, *Homo sapiens*? What major transitions have taken place since the emergence of *Homo sapiens*?

Chapters 8 and 9 discuss the Neolithic, especially the domestication of plants and animals, as a major adaptive change, with profound implications for human lifeways. The spread and intensification of farming and herding are tied to the appearance of the first towns, cities, and states, as well as the emergence of social stratification and major social inequalities.

The chapters on linguistic and sociocultural anthropology (10–19) are organized to place related content close together—although they are sufficiently independent to be assigned in any order the instructor might select. Thus, “Political Systems” (Chapter 12) logically follows “Making a Living” (Chapter 11). Chapters 13 and 14 (“Families, Kinship, and Marriage” and “Gender,” respectively) also form a coherent unit. The chapter on religion (15) covers not just traditional religious practices but also contemporary world religions and religious movements. It is followed by four chapters (16–19) that form a natural unit exploring sociocultural transformations and expressions in today’s world.

This concluding unit represents one of the key differences between this text and others. The final four chapters address several important questions: How are race and ethnicity socially constructed and handled in different societies, and how do they generate prejudice, discrimination, and conflict? How and why did the modern world system emerge and expand? How has world capitalism affected patterns of stratification and inequality within and among nations? What were colonialism, imperialism, and Communism, and what are their legacies? How do economic development and globalization affect the places and people that anthropologists study? What is globalization—as fact, as policy, and as ideology? How do people today actively interpret and confront the world system and the products of globalization? What factors threaten continued human diversity? How can anthropologists work to ensure the preservation of that diversity?

Let me also single out two chapters present in *Window on Humanity* but not found consistently in other anthropology texts: “Ethnicity and Race” (Chapter 16) and “Gender” (Chapter 14). I believe that systematic consideration of race, ethnicity, and gender is vital

in an introductory anthropology text. Anthropology's distinctive four-field approach can shed special light on these topics. We see this not only in Chapter 16 ("Ethnicity and Race") but also in Chapter 4 ("Evolution, Genetics, and Human Variation"), in which race is discussed as a problematic concept in biology. Race and gender studies are fields in which anthropology always has taken the lead. I'm convinced that anthropology's special contributions to understanding the biological, social, cultural, and linguistic dimensions of race, ethnicity, and gender should be highlighted in any introductory text.

New in the Sixth Edition

All chapters of *Window on Humanity* have been updated, with charts, tables, and statistics based on the most recent information available. Of the 19 end-of-chapter boxes, 12 are new to this edition. These "Anthropology Today" boxes are intended to bring home anthropology's relevance to current issues and events in today's world. With the revised Chapter 19, "Anthropology's Role in a Globalizing World" and other changes, the focus on global themes, trends, and issues has been strengthened even further in this edition.

Chapter-by-Chapter Changes

Chapter 1: What Is Anthropology?

This chapter has been updated.

Chapter 2: Culture

This chapter has been updated, with a rewritten section on globalization.

Chapter 3: Doing Anthropology

Chapter 3 has been updated and has a new "Anthropology Today" box, "Studying Health in the Bolivian Amazon."

Chapter 4: Evolution, Genetics, and Human Variation

This chapter has new material on lactose tolerance and a new "Anthropology Today" box, "Devastating Encounters within the Columbian Exchange."

Chapter 5: The Primates

Chapter 5 has been updated and contains a new "Anthropology Today" box, "Fearing a Planet without Apes."

Chapter 6: Early Hominins

This chapter has been updated and includes a more recent box about South Africa's latest major fossil find, *Australopithecus sediba*.

Chapter 7: The Genus *Homo*

Chapter 7 has been revised substantially, including new material on recent *H. rudolfensis* discoveries and China's Red Deer Cave People.

Chapter 8: The First Farmers

This chapter has been substantially revised. Specific changes include the following:

- New information on the recent discovery of the world’s oldest pottery, in China.
- A new introduction to the “Neolithic Revolution.”
- New information on pre-Neolithic herd management in the Middle East and the spread of the Neolithic to Europe.
- New information on the Chinese Neolithic.
- A major new section on costs and benefits of the Neolithic economy.
- A new “Anthropology Today” on global climate change and threats to archaeology.

Chapter 9: The First Cities and States

Chapter 9 has been significantly revised and updated. The introductory sections have been completely rewritten. There is updated information on Peruvian state formation, as well as new information on early urbanism in Syria.

Chapter 10: Language and Communication

This chapter has been updated and contains a new “Anthropology Today” box on California accents.

Chapter 11: Making a Living

Chapter 11 has undergone a major revision and rewrite. Specific changes include the following:

- A new introduction clarifying the huge importance and transformational nature of food-producing (Neolithic) economies.
- New material on foragers in South Asia.
- A new hunter-gatherer distribution map.
- A new section on the cultivation continuum.

Chapter 12: Political Systems

Chapter 12 contains a new “Anthropology Today” on contemporary politics in rural Thailand.

Chapter 13: Families, Kinship, and Marriage

This chapter has an informative new “Anthropology Today” on American family life in the 21st century. The section on gifts at marriage has been substantially revised. All charts, figures, and statistics have been updated.

Chapter 14: Gender

Chapter 14 has been updated and revised substantially. It now includes the following:

- A discussion of Margaret Mead’s pioneering work on gender.
- An updated section on gender in industrial societies.
- Revised material on transgender and gender identity (as distinguished from sexual orientation).
- A new “Anthropology Today” on the Global Gender Gap Index.

Chapter 15: Religion

Chapter 15 has been revised substantially, with new sections on

- Protestant values and capitalism.
- Religion and cultural globalization, including subsections on Evangelical Protestantism and Pentecostalism; homogenization, indigenization, or hybridization; anti-modernism and fundamentalism; and the spread of Islam.
- A substantially updated and revised section on world religions.
- A new “Anthropology Today” on “baseball magic.”

Chapter 16: Ethnicity and Race

This chapter has been updated and revised substantially. It now includes the following:

- A new section on minority groups and stratification.
- A new section on changing American demographics.
- New material on evolving Brazilian racial classification.
- A revised and updated section on multiculturalism.
- A new “Anthropology Today”—the AAA Statement on Race.

Chapter 17: Applying Anthropology

This chapter has been updated throughout.

Chapter 18: The World System and Colonialism

Chapter 18 (formerly 16) has been moved next to the final chapter, where they form a coherent unit. Updates and other revisions to this chapter include the following:

- A major new section on neoliberalism and NAFTA’s economic refugees.
- A new discussion of skewed wealth distribution in the contemporary United States (including the Occupy Movement).

Chapter 19: Anthropology’s Role in a Globalizing World

A substantially revised section on globalization begins this chapter, which has been updated throughout. Specific changes include the following:

- The section on energy consumption and industrial degradation has been moved here from the previous chapter.
- A major new section on emerging diseases.
- Substantially revised sections on global climate change, environmental anthropology, and cultural imperialism and indigenization.
- A new concluding discussion of anthropology’s key lessons.

Pedagogy

This sixth edition incorporates suggestions made by users of my other texts as well as reviewers of previous editions of *Window on Humanity*. The result, I hope, is a sound, well-organized, interesting, and user-friendly introduction to anthropology.

Window contains 12 new “Anthropology Today” boxes. Placed consistently at the end of each chapter, “Anthropology Today” is intended to give students a chance to consider anthropology’s relevance to today’s world and to their own lives. Some boxes examine current events or debates. Others are more personal accounts, which add human feeling to the presentation of anthropology’s subject matter. Many boxes illustrate a point with examples familiar to students from their enculturation or everyday experience.

End-of-chapter summaries are numbered, to make major points stand out.

Boldface key terms in each chapter are defined in the glossary at the end of the book. A bibliography contains references cited and relevant reading.

Supplements

Visit our Online Learning Center website at www.mhhe.com/kottakwoh6e for robust student and instructor resources.

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Acknowledgments

I'm grateful to many colleagues at McGraw-Hill. Emily Pecora has been a wonderfully helpful and supportive developmental editor. I thank her for synthesizing and summarizing the prepublication reviews, helping me plan and implement this revision, and working with me to complete and submit the manuscript. I always benefit from Emily's careful reading of my new writing, of which there was a lot in this edition. Thanks, too, to Courtney Austermehele, Brand Manager for anthropology (along with sociology and women's studies), to Marketing Manager Philip Weaver, and to Brand Coordinator Ryan Viviani. I'm grateful as well for the support of Director Gina Boedeker and Michael Ryan, Vice President and General Manager, Products & Markets.

Thanks to Bruce Gin for his work as Content Project Manager, guiding the manuscript through production and keeping everything moving on schedule. Thanks as well to the entire K4 team. Laura Fuller, Buyer, worked with the printer to make sure everything came out right. Thanks, too, to Emily Tietz, freelance photo researcher, and to Geoffrey Hughes for his work on the Instructor's Manual and to Geoffrey Williams for his work on the PowerPoints, Test Bank, and student supplements located on the Online Learning Center website. I also thank Debra DeBord for copyediting, Lauren Timmer for proofreading, and Tara McDermott for executing the design.

Shawntel Schmitt also deserves thanks as content licensing specialist, as does Mahalakshmi Vijay, media project manager, who created the OLC. I also thank Wes Hall, who has handled the literary permissions.

I'm very grateful to a long list of reviewers of this and previous editions of *Window on Humanity* and *Mirror for Humanity*:

The names and schools of the reviewers contracted by McGraw-Hill to review the 5th edition of *Window on Humanity*, in preparation for the 6th edition, or the 8th edition of *Mirror for Humanity*, in preparation for the 9th edition, are as follows:

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The reviewers of previous editions of this book and of *Mirror for Humanity* are as follows:

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Broward Community College

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University of Alberta

Salena Wakim
Orange Coast College

Thomas Williamson
St. Olaf College

I'm grateful to all these reviewers and professors for their enthusiasm and their suggestions for changes, additions, and deletions (sometimes in very different directions!).

Special thanks to Michael McCrath of the Seattle Community Colleges for his excellent suggestion for a change in the chapter “Families, Kinship, and Marriage,” which I have implemented in this edition.

Students also share their insights about Window via e-mail. Anyone—student or instructor—can reach me at the following e-mail address: ckottak@bellsouth.net.

As usual, my family provides me with understanding, support, and inspiration in my writing projects. Dr. Nicholas Kottak and Dr. Juliet Kottak Mavromatis regularly share

their insights with me, as does Isabel Wagley Kottak, my long-term companion in the field and in life, to whom this book is dedicated.

During my long academic career, I've benefited from the knowledge, help, and advice of so many friends, colleagues, teaching assistants (graduate student instructors—GSIs), and students that I can no longer fit their names into a short preface. I hope they know who they are and accept my thanks. I do especially thank my co-authors of other books: Kathryn Kozaitis (*On Being Different*), Lara Descartes (*Media and Middle Class Moms*), and Lisa Gezon (*Culture*). Kathryn, Lara, and Lisa are prized former students of mine. Today they all are accomplished anthropologists in their own right, and they continue to share their wisdom with me.

I'm very grateful to my Michigan colleagues who've shared their insights and suggested ways of making my books better. Thanks especially to a 101 team that includes Tom Fricke, Stuart Kirsch, Holly Peters-Golden, and Andrew Shryock. Special thanks as well to Joyce Marcus and Kent Flannery for continuing to nurture the archaeologist in me.

Feedback from students, faculty, and GSIs keeps me up-to-date on the interests, needs, and views of the people for whom *Window* is written, as does my ongoing participation in workshops on the teaching of anthropology. I continue to believe that effective textbooks are based in the enthusiastic practice of teaching. I hope this product of my experience will continue to be helpful to others.

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About the Author



Conrad Phillip Kottak, who received his AB and PhD degrees from Columbia University, is the Julian H. Steward Collegiate Professor Emeritus of Anthropology at the University of Michigan, where he served as anthropology department chair from 1996 to 2006. In 1991 he was honored for his teaching by the university and the state of Michigan. In 1999 the American Anthropological Association (AAA) awarded Professor Kottak its Award for Excellence in the Undergraduate Teaching of Anthropology. In 2005 he was elected to the American Academy of Arts and Sciences, and in 2008 to the National Academy of Sciences. Profes-

sor Kottak has done ethnographic fieldwork in Brazil, Madagascar, and the United States. His general interests are in the processes by which local cultures are incorporated—and resist incorporation—into larger systems. This interest links his earlier work on ecology and state formation in Africa and Madagascar to his more recent research on globalization, national and international culture, and the mass media.

The fourth edition of Kottak's popular case study *Assault on Paradise: The Globalization of a Little Community in Brazil*, based on his continuing fieldwork in Arembepe, Bahia, Brazil, was published in 2006 by McGraw-Hill. In a research project during the 1980s, Kottak blended ethnography and survey research in studying "Television's Behavioral Effects in Brazil." That research is the basis of Kottak's book *Prime-Time Society: An Anthropological Analysis of Television and Culture* (updated edition published by Left Coast Press in 2009)—a comparative study of the nature and impact of television in Brazil and the United States. Kottak's Brazilian media research is being updated through a new (2013) NSF grant titled "The Evolution of Media Impact: A Longitudinal and Multi-Site study of Television and New Electronic/Digital Media in Brazil."

Kottak's other books include *The Past in the Present: History, Ecology and Cultural Variation in Highland Madagascar* (1980), *Researching American Culture: A Guide for Student Anthropologists* (edited 1982) (both University of Michigan Press), and *Madagascar: Society and History* (1986) (Carolina Academic Press). The most recent editions (15th) of his texts *Anthropology: Appreciating Human Diversity* and *Cultural Anthropology: Appreciating Cultural Diversity* were published by McGraw-Hill in 2013. He also is the author of *Mirror for Humanity: A Concise Introduction to Cultural Anthropology* (9th ed., McGraw-Hill, 2014) and of this book—*Window on Humanity: A Concise Introduction to Anthropology* (6th ed., McGraw-Hill, 2014).

Conrad Kottak's articles have appeared in academic journals, including *American Anthropologist*, *Journal of Anthropological Research*, *American Ethnologist*, *Ethnology*, *Human Organization*, and *Luso-Brazilian Review*. He also has written for more popular journals, including *Transaction/SOCIETY*, *Natural History*, *Psychology Today*, and *General Anthropology*.

In other research projects, Professor Kottak and his colleagues have investigated the emergence of ecological awareness in Brazil, the social context of deforestation and biodiversity conservation in Madagascar, and popular participation in economic

development planning in northeastern Brazil. With the support of the Alfred P. Sloan Foundation, Professor Kottak and his colleague Lara Descartes investigated how middle-class American families in a midwestern town draw on various media in planning, managing, and evaluating the competing demands of work and family. That research is the basis of their book *Media and Middle Class Moms: Images and Realities of Work and Family* (Descartes and Kottak 2009, Routledge/ Taylor and Francis). Professor Kottak currently is collaborating with Professor Richard Pace and several graduate students on research investigating “The Evolution of Media Impact: A Longitudinal and Multi-Site study of Television and New Electronic/Digital Media in Brazil.”

Conrad Kottak appreciates comments about his books from professors and students. He can be reached by e-mail at the following e-mailaddress: **ckottak@bellsouth.net**.

Chapter 1

What Is Anthropology?

Human Adaptability

Adaptation, Variation, and Change

General Anthropology

Cultural Forces Shape Human Biology

The Subdisciplines of Anthropology

Cultural Anthropology

Archaeological Anthropology

Biological, or Physical, Anthropology

Linguistic Anthropology

Anthropology and Other Academic Fields

Applied Anthropology

Anthropology Today: His Mother, the Anthropologist

“That’s just human nature.” “People are pretty much the same all over the world.” Such opinions, which we hear in conversations, in the mass media, and in a dozen scenes in daily life, promote the erroneous idea that people in other countries have the same desires, feelings, values, and aspirations that we do. Such statements proclaim that because people are essentially the same, they are eager to receive the ideas, beliefs, values, institutions, practices, and products of an expansive North American culture. Often this assumption turns out to be wrong.

Anthropology offers a broader view—a distinctive comparative, cross-cultural perspective. Most people think that anthropologists study nonindustrial societies, and they do. My research has taken me to remote villages in Brazil and Madagascar, a large island off the southeast coast of Africa. In Brazil I sailed with fishers in simple sailboats on Atlantic waters. Among Madagascar’s Betsileo people I worked in rice fields and took part in ceremonies in which I entered tombs to rewrap the corpses of decaying ancestors.

However, anthropology is much more than the study of nonindustrial peoples. It is a comparative science that examines all societies, ancient and modern, simple and complex. Most of the other social sciences tend to focus on a single society, usually an industrial nation such as the United States or Canada. Anthropology offers a unique cross-cultural perspective, constantly comparing the customs of one society with those of others.

To become a cultural anthropologist, one normally does *ethnography* (the first-hand, personal study of local settings). Ethnographic fieldwork usually entails spending a year

or more in another society, living with the local people and learning about their way of life. No matter how much the ethnographer discovers about that society, he or she remains an alien there. That experience of alienation has a profound impact. Having learned to respect other customs and beliefs, anthropologists can never forget that there is a wider world. There are normal ways of thinking and acting other than our own.

Human Adaptability

Anthropologists study human beings wherever and whenever they find them—in a Turkish café, a Mesopotamian tomb, or a North American shopping mall. Anthropology is the exploration of human diversity in time and space. Anthropology studies the whole of the human condition: past, present, and future; biology, society, language, and culture. Of particular interest is the diversity that comes through human adaptability.

Humans are among the world's most adaptable animals. In the Andes of South America, people wake up in villages 16,000 feet above sea level and then trek 1,500 feet higher to work in tin mines. Tribes in the Australian desert worship animals and discuss philosophy. People survive malaria in the tropics. Men have walked on the moon. The model of the starship *Enterprise* in Washington's Smithsonian Institution symbolizes the desire to "seek out new life and civilizations, to boldly go where no one has gone before." Wishes to know the unknown, control the uncontrollable, and create order out of chaos find expression among all peoples. Creativity, adaptability, and flexibility are basic human attributes, and human diversity is the subject matter of anthropology.

Students often are surprised by the breadth of **anthropology**, which is the study of the human species and its immediate ancestors. Anthropology is a uniquely comparative and **holistic** science. *Holism* refers to the study of the whole of the human condition: past, present, and future; biology, society, language, and culture.

People share **society**—organized life in groups—with other animals, including baboons, wolves, mole rats, and even ants. Culture, however, is more distinctly human. **Cultures** are traditions and customs, transmitted through learning, that form and guide the beliefs and behavior of the people exposed to them. Children learn such a tradition by growing up in a particular society, through a process called enculturation. Cultural traditions include customs and opinions, developed over the generations, about proper and improper behavior. These traditions answer such questions as: How should we do things? How do we make sense of the world? How do we tell right from wrong? What is right, and what is wrong? A culture produces a degree of consistency in behavior and thought among the people who live in a particular society.

The most critical element of cultural traditions is their transmission through learning rather than through biological inheritance. Culture is not itself biological, but it rests on certain features of human biology. For more than a million years, humans have had at least some of the biological capacities on which culture depends. These abilities are to learn, to think symbolically, to use language, and to employ tools and other products in organizing their lives and adapting to their environments.

Anthropology confronts and ponders major questions of human existence as it explores human biological and cultural diversity in time and space. By examining ancient

bones and tools, we unravel the mysteries of human origins. When did our ancestors separate from those remote great-aunts and great-uncles whose descendants are the apes? Where and when did *Homo sapiens* originate? How has our species changed? What are we now, and where are we going? How have changes in culture and society influenced biological change? Our genus, *Homo*, has been changing for more than 2 million years. Humans continue to adapt and change both biologically and culturally.

Adaptation, Variation, and Change

Adaptation refers to the processes by which organisms cope with environmental forces and stresses, such as those posed by climate and *topography* or terrains, also called landforms. How do organisms change to fit their environments, such as dry climates or high mountain altitudes? Like other animals, humans use biological means of adaptation. But humans are unique in also having cultural means of adaptation. Table 1.1 summarizes the cultural and biological means that humans use to adapt to high altitudes.

Mountainous terrains pose particular challenges, those associated with high altitude and oxygen deprivation. Consider four ways (one cultural and three biological) in which humans may cope with low oxygen pressure at high altitudes. Illustrating cultural (technological) adaptation would be a pressurized airplane cabin equipped with oxygen masks. There are three ways of adapting biologically to high altitudes: genetic adaptation, long-term physiological adaptation, and short-term physiological adaptation. First, native populations of high-altitude areas, such as the Andes of Peru and the Himalayas of Tibet and Nepal, seem to have acquired certain genetic advantages for life at very high altitudes. The Andean tendency to develop a voluminous chest and lungs probably has a genetic basis. Second, regardless of their genes, people who grow up at a high altitude become physiologically more efficient there than genetically similar people who have grown up at sea level would be. This illustrates long-term physiological adaptation during the body's growth and development. Third, humans also have the capacity for short-term or immediate physiological adaptation. Thus, when lowlanders arrive in the highlands, they immediately increase their breathing and heart

TABLE 1.1 Forms of Cultural and Biological Adaptation (to High Altitude)

Form of Adaptation	Type of Adaptation	Example
Technology	Cultural	Pressurized airplane cabin with oxygen masks
Genetic adaptation (occurs over generations)	Biological	Larger "barrel chests" of native highlanders
Long-term physiological adaptation (occurs during growth and development of the individual organism)	Biological	More efficient respiratory system, to extract oxygen from "thin air"
Short-term physiological adaptation (occurs spontaneously when the individual organism enters a new environment)	Biological	Increased heart rate, hyperventilation

rates. Hyperventilation increases the oxygen in their lungs and arteries. As the pulse also increases, blood reaches their tissues more rapidly. All these varied adaptive responses—cultural and biological—achieve a single goal: maintaining an adequate supply of oxygen to the body.

As human history has unfolded, the social and cultural means of adaptation have become increasingly important. In this process, humans have devised diverse ways of coping with a wide range of environments. The rate of cultural adaptation and change has accelerated, particularly during the past 10,000 years. For millions of years, hunting and gathering of nature's bounty—*foraging*—was the sole basis of human subsistence. However, it took only a few thousand years for **food production** (the cultivation of plants and domestication of animals), which originated some 12,000–10,000 years ago, to replace foraging in most areas. Between 6000 and 5000 B.P. (before the present), the first civilizations arose. These were large, powerful, and complex societies, such as ancient Egypt, that conquered and governed large geographic areas.

Much more recently, the spread of industrial production has profoundly affected human life. Throughout human history, major innovations have spread at the expense of earlier ones. Each economic revolution has had social and cultural repercussions. Today's global economy and communications link all contemporary people, directly or indirectly, in the modern world system. People must cope with forces generated by progressively larger systems—region, nation, and world. The study of such contemporary adaptations generates new challenges for anthropology: "The cultures of world peoples need to be constantly rediscovered as these people reinvent them in changing historical circumstances" (Marcus and Fischer 1986, p. 24).

General Anthropology

The academic discipline of anthropology, also known as **general anthropology** or "four-field" anthropology, includes four main subdisciplines, or subfields. They are sociocultural, archaeological, biological, and linguistic anthropology. (From here on, the shorter term *cultural anthropology* will be used as a synonym for *sociocultural anthropology*.) Of the subfields, cultural anthropology has the largest membership. Most departments of anthropology teach courses in all four subfields.

There are historical reasons for the inclusion of four subfields in a single discipline. The origin of anthropology as a scientific field, and of American anthropology in particular, can be traced to the 19th century. Early American anthropologists were concerned especially with the history and cultures of the native peoples of North America. Interest in the origins and diversity of Native Americans brought together studies of customs, social life, language, and physical traits. Anthropologists still are pondering such questions as: Where did Native Americans come from? How many waves of migration brought them to the New World? What are the linguistic, cultural, and biological links among Native Americans and between them and Asia? (Note that a unified four-field anthropology did not develop in Europe, where the subfields tend to exist separately.)

There also are logical reasons for the unity of American anthropology. Each subfield considers variation in time and space (that is, in different geographic areas). Cultural and archaeological anthropologists study changes in social life and customs (among many other topics). Archaeologists use studies of living societies to imagine what life might have been like in the past. Biological anthropologists examine evolutionary changes in physical form, for example, anatomical changes that might have been associated with the origin of tool use or language. Linguistic anthropologists may reconstruct the basics of ancient languages by studying modern ones.

The subfields influence each other as anthropologists talk to each other, read books and journals, and meet in professional organizations. General anthropology explores the basics of human biology, society, and culture and considers their interrelations. Anthropologists share certain key assumptions. Perhaps the most fundamental is the idea that sound conclusions about “human nature” cannot be derived from studying a single population, nation, society, or cultural tradition. A comparative, cross-cultural approach is essential.



Early American anthropology was especially concerned with the history and cultures of Native North Americans. Ely S. Parker, or Ha-sa-no-an-da, was a Seneca Indian who made important contributions to early anthropology. Parker also served as Commissioner of Indian Affairs for the United States.

Cultural Forces Shape Human Biology

Anthropology’s comparative, biocultural perspective recognizes that cultural forces constantly mold human biology. (**Biocultural** refers to the inclusion and combination of both biological and cultural perspectives and approaches to comment on or solve a particular issue or problem.) Culture is a key environmental force in determining how human bodies grow and develop. Cultural traditions promote certain activities and abilities, discourage others, and set standards of physical well-being and attractiveness. Physical activities, including sports, which are influenced by culture, help build the body. For example, North American girls are encouraged to pursue, and therefore do well in, competition involving figure skating, gymnastics, track and field, swimming, diving, and many other sports. Brazilian girls, although excelling in the team sports of basketball and volleyball, haven’t fared nearly as well in individual sports as have their American and Canadian counterparts. Why are people encouraged to excel as athletes in some nations but not others? Why do people in some countries invest so much time and effort in competitive sports that their bodies change significantly as a result?

Cultural standards of attractiveness and propriety influence participation and achievement in sports. Americans run or swim not just to compete but to keep trim and fit. Brazil’s beauty standards have traditionally accepted more fat, especially in female buttocks and hips. Brazilian men have had some international success in swimming and running, but Brazil rarely sends female swimmers or runners to the Olympics.

Brazil rarely sends female swimmers to the Olympics. One exception (shown here) is Fabiola Molina, who competed in the 2000, 2008, and 2012 Summer Olympics. How might years of competitive swimming affect phenotype?



One reason Brazilian women avoid competitive swimming in particular may be that sport's effects on the body. Years of swimming sculpt a distinctive physique: an enlarged upper torso, a massive neck, and powerful shoulders and back. Successful female swimmers tend to be big, strong, and bulky. The countries that have produced them most consistently are the United States, Canada, Australia, Germany, the Scandinavian nations, the Netherlands, and the former Soviet Union, where this body type isn't as stigmatized as it is in Latin countries. Swimmers develop hard bodies, but Brazilian culture says that women should be soft, with big hips and buttocks, not big shoulders. Many young female swimmers in Brazil choose to abandon the sport rather than the "feminine" body ideal.

When you grew up, which sport did you appreciate the most—soccer, swimming, football, baseball, tennis, golf, or some other sport (or perhaps none at all)? Is this because of "who you are" or because of the opportunities you had as a child to practice and participate in this particular activity? When you were young, your parents might have told you that drinking milk and eating vegetables would help you grow up "big and strong." They probably didn't as readily recognize the role that *culture* plays in shaping bodies, personalities, and personal health. If nutrition matters in growth, so, too, do

cultural guidelines. What is proper behavior for boys and girls? What kinds of work should men and women do? Where should people live? What are proper uses of their leisure time? What role should religion play? How should people relate to their family, friends, and neighbors? Although our genetic attributes provide a foundation for our growth and development, human biology is fairly plastic—that is, it is malleable. Culture is an environmental force that affects our development as much as do nutrition, heat, cold, and altitude. Culture also guides our emotional and cognitive growth and helps determine the kinds of personalities we have as adults.

The Subdisciplines of Anthropology

Cultural Anthropology

Cultural anthropology is the study of human society and culture, the subfield that describes, analyzes, interprets, and explains social and cultural similarities and differences. To study and interpret cultural diversity, cultural anthropologists engage in two kinds of activity: ethnography (based on fieldwork) and ethnology (based on cross-cultural comparison). **Ethnography** provides an account of a particular community, society, or culture. During ethnographic fieldwork, the ethnographer gathers data that he or she organizes, analyzes, and interprets to develop that account, which may be in the form of a book, an article, or a film. Traditionally, ethnographers have lived in small communities and studied local behavior, beliefs, customs, social life, economic activities, politics, and religion (see Wolcott 2008).

The anthropological perspective derived from ethnographic fieldwork often differs radically from that of economics or political science. Those fields focus on national and official organizations and policies and often on elites. However, the groups that anthropologists traditionally have studied usually have been relatively poor and powerless. Ethnographers often observe discriminatory practices directed toward such people, who experience food shortages, dietary deficiencies, and other aspects of poverty. Political scientists tend to study programs that national planners develop, while anthropologists discover how these programs work on the local level.

Cultures are not isolated. As noted by Franz Boas (1940/1966) many years ago, contact between neighboring tribes always has existed and has extended over enormous areas. “Human populations construct their cultures in interaction with one another, and not in isolation” (Wolf 1982, p. ix). Villagers increasingly participate in regional, national, and world events. Exposure to external forces comes through the mass media, migration, and modern transportation. City and nation increasingly invade local communities with the arrival of tourists, development agents, government and religious officials, and political candidates. Such linkages are prominent components of regional, national, and international systems of politics, economics, and information. These larger systems increasingly affect the people and places anthropology traditionally has studied. The study of such linkages and systems is part of the subject matter of modern anthropology.

Ethnology examines, compares, analyzes, and interprets the results of ethnography—the data gathered in different societies. Ethnologists use such data to compare and

TABLE 1.2 Ethnography and Ethnology—Two Dimensions of Cultural Anthropology

Ethnography	Ethnology
Requires fieldwork to collect data	Uses data collected by a series of researchers
Is often descriptive	Is usually synthetic
Is group- and community-specific	Is comparative and cross-cultural

contrast and to make generalizations about society and culture. Looking beyond the particular to the more general, they attempt to identify and explain cultural differences and similarities, to test hypotheses, and to build theory to enhance our understanding of how social and cultural systems work. Ethnology gets its data for comparison not just from ethnography but also from the other subfields, particularly from archaeological anthropology, which reconstructs social systems of the past. (Table 1.2 summarizes the main contrasts between ethnography and ethnology.)

Archaeological Anthropology

Archaeological anthropology (more simply, “archaeology”) reconstructs, describes, and interprets human behavior and cultural patterns through material remains (see Fagan 2012). At sites where people live or have lived, archaeologists find artifacts—material items that humans have made, used, or modified—such as tools, weapons, campsites, buildings, and garbage. Plant and animal remains and ancient garbage tell stories about consumption and activities. Wild and domesticated grains have different characteristics, which allow archaeologists to distinguish between gathering and cultivation. Examination of animal bones reveals the ages of slaughtered animals and provides other information useful in determining whether species were wild or domesticated.

Analyzing such data, archaeologists answer several questions about ancient economies: Did the group get its meat from hunting, or did it domesticate and breed animals, killing only those of a certain age and sex? Did plant food come from wild plants or from sowing, tending, and harvesting crops? Did the residents make, trade for, or buy particular items? Were raw materials available locally? If not, where did they come from? From such information, archaeologists reconstruct patterns of production, trade, and consumption.

Archaeologists have spent considerable time studying potsherds, fragments of earthenware. Potsherds are more durable than many other artifacts, such as textiles and wood. The quantity of pottery fragments allows estimates of population size and density. The discovery that potters used materials that were not available locally suggests systems of trade. Similarities in manufacture and decoration at different sites may be proof of cultural connections. Groups with similar pots may be historically related. Perhaps they shared common cultural ancestors, traded with each other, or belonged to the same political system.

Many archaeologists examine paleoecology. *Ecology* is the study of interrelations among living things in an environment. The organisms and environment together constitute an *ecosystem*, a patterned arrangement of energy flows and exchanges. Human ecology studies ecosystems that include people, focusing on the ways in which human use “of nature influences and is influenced by social organization and cultural values” (Bennett 1969, pp. 10–11). *Paleoecology* looks at the ecosystems of the past.



An archaeological team works at Harappa, one site from an ancient Indus River civilization dating back some 4,800 years.

In addition to reconstructing ecological patterns, archaeologists may infer cultural transformations, for example, by observing changes in the size and type of sites and the distance between them. A city develops in a region where only towns, villages, and hamlets existed a few centuries earlier. The number of settlement levels (city, town, village, hamlet) in a society is a measure of social complexity. Buildings offer clues about political and religious features. Temples and pyramids suggest that an ancient society had an authority structure capable of marshaling the labor needed to build such monuments. The presence or absence of certain structures, like the pyramids of ancient Egypt and Mexico, reveals differences in function between settlements. For example, some towns were places where people went to attend ceremonies. Others were burial sites; still others were farming communities.

Archaeologists also reconstruct behavior patterns and lifestyles of the past by excavating. This involves digging through a succession of levels at a particular site. In a given area, through time, settlements may change in form and purpose, as may the connections between settlements. Excavation can document changes in economic, social, and political activities.

Although archaeologists are best known for studying prehistory, that is, the period before the invention of writing, they also study the cultures of historical and even living peoples (see Sabloff 2008). Studying sunken ships off the Florida coast, underwater archaeologists have been able to verify the living conditions on the vessels that brought ancestral African Americans to the New World as enslaved people. In a research project begun in 1973 in Tucson, Arizona, archaeologist William Rathje has learned about contemporary life by studying modern garbage. The value of “garbology,” as Rathje calls it,