

FIFTH EDITION

# ADULT DEVELOPMENT & AGING

BIOPSYCHOSOCIAL  
PERSPECTIVES



Susan Krauss Whitbourne  
Stacey B. Whitbourne

WILEY



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Fifth Edition

Susan Krauss Whitbourne, Ph.D.

*University of Massachusetts Amherst*

Stacey B. Whitbourne, Ph.D.

*VA Boston Healthcare System*

**WILEY**

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# PREFACE

**E**veryone ages. This very fact should be enough to draw you into the subject matter of this course, whether you are the student or the instructor. Yet, for many people, it is difficult to imagine the future in 50, 40, or even 10 years from now. The goal of our book is to help you imagine your future and the future of your family, your friends, and your society. We have brought together the latest scientific findings about aging with a more personal approach to encourage you to take this imaginative journey into your future.

The fifth edition of *Adult Development and Aging: Biopsychosocial Perspectives* incorporates material that we believe is vital to your understanding of this rapidly developing and fascinating field of study. Much of what you will read comes directly from Susan's classroom teaching of the Psychology of Aging course at the University of Massachusetts Amherst. She continues to incorporate her day-to-day teaching of the course into the text, which keeps the material current, fresh, and engaging. At the same time, her active involvement in research on the psychology of adult development and aging gives her the ability to sift through the available findings and pull out those that are central to an understanding of individuals as they change from the years of early adulthood through late life.

Stacey was inspired to pursue the field of aging after taking her mother's course in 1999. She continued her graduate work in social and developmental psychology, focusing on cognitive functioning in later adulthood. Stacey is the program director for a major national initiative that is building a health and genomic database for future studies of military veterans. Having also taught adult development and aging at Brandeis University and the University of Massachusetts Boston, she is also attuned to student needs and interests.

We are proud to say that the addition of Stacey as a coauthor brings a third generation into the field in a tradition begun by Theodore C. Krauss, M.D., Susan's father, an innovator in geriatric medicine. Susan became interested

in the scholarly field of aging as an undergraduate when she decided to write a paper on personality and adaptation in a developmental psychology course. At the same time, her father's professional activities had a profound influence and made the choice of gerontology (the scientific study of aging) a natural one.

It is our hope and belief that you will find yourself as engrossed in the psychology of adult development and aging as we are. Not only is everyone around you aging, but also the issues that researchers in the field examine range all the way from the philosophical to the practical. Why do living things age? Is there a way to slow down the aging process? How will society deal with the aging of the Baby Boomers? How will job markets be affected by an aging society? Will the young adults of today age differently than did their parents and grandparents? Bringing it to a personal level, as you take the course, you'll start to ask questions about your own life. What challenges await you as you begin your career? What will it be like to start a family? How will you manage the transition into your early adulthood as you leave college behind to pursue your own life? All of these, and more, are questions that you will find yourself asking as you explore the many complexities of the process that causes people to change and grow throughout life. You will learn not only how people grow older but also how to grow older in a way that is healthy and satisfying.

## THEMES OF THE BOOK

The biopsychosocial model emphasized in our text is intended to encourage you to think about the multiple interactions among the domains of biology, psychology, and sociology. According to this model, changes in one area of life have effects on changes in other areas. The centerpiece of this model is identity, your self-definition. You interpret the experiences you have through the framework provided by your identity. In turn, your experiences stimulate you to change your self-definition.

This is an exciting time to be studying adult development and aging. The topic is gaining increasing media attention and tremendous momentum as an academic discipline within life span development. The biopsychosocial model fits within the framework of contemporary approaches taking hold in the sciences in general that emphasize the impact of social context on individuals throughout all periods of life. Entirely new concepts, sets of data, and practical applications of these models are resulting in a realization of the dreams of many of the classic developmental psychologists whose work shaped the field in the early 20th century.

Adult development and aging are areas that have no national boundaries. Aging is now being recognized as a priority for researchers and policy makers around the world, not only in the United States and Canada. We can all benefit from this international perspective both for our own countries and for those of citizens around the world.

## ORGANIZATION

If you read the chapters of this book in order from start to finish, you will progress from the basics in the first three chapters to more complex issues, starting in Chapter 4, that place relatively more emphasis on the “bio,” the “psycho,” and the “social.” However, not all instructors choose to proceed in this fashion, and we have designed the book with this flexibility as an option. We emphasize the biopsychosocial model throughout, in that many of the topics, regardless of where they appear in the book, span areas as diverse, for example, as driving and diabetes.

We do recommend, though, that the last chapter you read is not the one on death and dying, as is often the case in other books in the field. Our last chapter covers successful aging. Many students and instructors have shared with us their appreciation of our ending on a “high note.” Even though death is obviously the final period of life, we each have the potential to live on after our own ending through the works we create, the legacies we leave behind, and the people whose lives we have touched. These are the themes that we would like you to take with you from this book in the years and decades ahead.

## FEATURES

### Up-to-Date Research

The topics and features in this text are intended to involve you in the field of aging from a scholarly and personal perspective. You will find that the most current research is presented throughout the text, with careful and detailed

explanations of the studies that highlight the most important scholarly advances. We have given particular attention to new topics and approaches, including neuroscience and genetics, as well as continuing to bring to students the latest advances in cognition, personality, relationships, and vocational development as well as highlighting sociocultural influences on development, including race, ethnicity, and social class.

### Aging Today

Susan writes a highly popular *Psychology Today* blog entitled *Fulfillment at Any Age*. Each chapter opens with a condensed version of one of the blog entries relevant to that chapter’s content. These informal chapter openings will stimulate students to think about the academic material they will read in the subsequent pages, and in some cases, include practical self-help tips so popular with readers.

### Engaging Figures and Tables

Each chapter is illustrated with photographs, figures, and tables intended to bring a strong visual element into the text. Many of these figures clearly summarize important research findings and theoretical models. Our selection of these materials connects to the PowerPoint slides that instructors can download from the Wiley website.

### Contemporary Approach

With coauthors literally one generation apart, it’s been our goal to find the balance between the “professor” and the “student” perspectives. As a result, you will find many current examples relevant to people in your age group, whether you’re a returning student or a student of traditional college age. Instructors, too, will find material that they can relate to their own experiences, whether they are relative newcomers or more seasoned academics.

## STUDENT LEARNING AIDS

### Glossary Terms

We have made a concerted effort in this edition to provide a large number of glossary terms, indicated in bold in each chapter, and listed at the end of the book. Although it may seem like you will have a great many terms to memorize, the fact of the matter is that you will need to learn them anyway, and by having them provided in your glossary, you’ll find it easier to spot them when it comes time to



review for your exams. Susan finds that her students like to study from flashcards that they make up, and if you find this a useful study tool, the glossary terms will make that process much more straightforward. The majority of these terms relate specifically to adult development and aging, but where we felt it was helpful for you to review a term that you may not have encountered for a while, we also included several terms of a more general nature.

## Numbered Summaries

You will find a numbered summary for each chapter that will supplement your studying and help you narrow down your reviewing to the chapter's main points. Together with the glossary terms, these will give you a comprehensive overview, though they will help you the most if you actually read the chapters themselves.

## CHANGES IN THE FIFTH EDITION

The first edition of *Adult Development and Aging: Biopsychosocial Perspectives* was intended to provide a fresh and engaging approach to the field of the psychology of adult development and aging by focusing on three themes: a multidisciplinary approach, positive images of aging, and the newest and most relevant research. We continue this tradition in the fifth edition because we want you, our readers, to feel as connected to the material as possible. Our thinking is that students will be more motivated to complete their reading if they like the text and feel that they can relate to it. At the same time, instructors will find their job that much easier because students sitting in their classrooms will come to class ready to discuss what they've read.

Instructors who have developed their course based on earlier editions will not need to change the basic structure of their lectures and assignments. However, to reflect this ever-changing field, we shifted material within the chapters, in some cases deleting topics that by now are no longer considered relevant in order to make room to cover the newer approaches that have come into prominence within the past three years.

Although many of the classics remain, we have included nearly 500 references from the past 3 years, up through early 2013. In virtually all cases where we reference population data, we rely on sources from 2012 or 2013. We also give expanded coverage to global population and health data in keeping with our stated goal of providing an international perspective.

We have added a number of specific topics that expand the potential for this course to reach students interested

in neuroscience, clinical psychology, social psychology, health, and applied psychology. In taking on these new topics, we are sensitive to the need to keep the overall length of the book the same, so we have dropped other areas that are now past their prime.

In the area of statistics, within the research methods chapter, we now include a section on multivariate analyses that explains the use of structural equation modeling and path analysis. These are topics that are now becoming part of the standard literature in many areas of the psychology of aging, if not psychology in general. We also expand our treatment of research methods to include epidemiology and meta-analysis, both of which are critical to understanding, again, many of the findings we present throughout the book. Because we draw heavily from several large-scale studies such as MIDUS and Whitehall II, we also explain them in the early chapters of the book.

Within the section on the nervous system, we cover brain scanning methods as well as expanded treatment of plasticity models. We include new research on sleep and memory and the brain's default network. The chapter on health now reviews measurement of functional activity (ADLs and IADLs), and we renamed the section on dementia "Neurocognitive Disorders," reflecting the changing terminology in DSM-5.

Our chapters on cognition underwent significant revision, though we have kept the basic structure the same. Specifically, we now include new sections on videogames and aging, have expanded the treatment of driving and aging, cover executive functioning and neuropsychological assessment, and include the latest research on using virtual reality training to help older adults compensate for memory loss. We have added new theories of intelligence and include a detailed discussion of the WAIS-IV, which was a radical departure from previous versions of the WAIS. New research on reading and aging, bilingualism, and cognitive plasticity also make these chapters timely and relevant.

Our coverage of personality and aging has been revised to discuss minority identity issues, the emerging field of narrative research, and changes in the approach to studying attachment in adulthood and later life. We have, of course, included the most up-to-date coverage of the personality and health relationships.

In the relationships and family chapter, which is among the favorites of students who take this class, we have expanded our treatment of cohabitation, same-sex families, and the intergenerational solidary and ambivalence models. We have added new studies on "helicopter parents" as well as several that focus on adult children who return home to live with their parents. Widowhood was previously broken up between the relationship and bereavement chapters; we now present the topic in its entirety within the context of

family. Adding to our coverage of long-term relationships, we also discuss the enduring dynamics model of intimacy.

Within the vocational development chapter, we focus on the latest findings on work–family relations, revising the previous edition to examine the differing models with the most recent research as well as touching on the topic of family-friendly workplaces. We address the issue of employment among military veterans, and cover several areas of work stress, including workplace bullying and emotional labor. The fascinating topic of vocations as “callings” also allows us to provide a new perspective on vocational satisfaction. Within the section on leisure, we also present studies that examine the travel patterns of retired adults. Our coverage of the financing of pensions and Social Security now includes sections on the changes occurring in Europe and how they affect the global economy.

The entire chapter on mental health follows the 2013 publication of psychiatry’s newest diagnostic manual, the DSM-5. In addition, we present data from the most recent models on aging and psychopathology. We include the use of telepsychology in the treatment of older adults, a field that is rapidly gaining momentum in clinical psychology in general. In the area of elder abuse, we present new data gathered since the last edition that clarifies the types and prevalence of this tragic situation.

In the long-term care chapter, we have reorganized the sections to make the distinctions among types of settings more clear, and also include a section on “aging in place.” We look once again at the abuses within nursing homes and also present the positive side of new models of care. An important topic in this chapter is health care (in the U.S.) and the future of Medicare, which we present in a way that will help students realize why this is of such vital concern to them, regardless of their age. We also culled through the many statistical compilations of data on nursing homes, which is surprisingly difficult to find, and summarize the numbers in a way that drives home their importance.

The chapter on death and dying contains many of the same topics as previous editions, but is slightly reorganized to make the organization of topics clearer to the reader. We also provide an update on the international data on mortality as these reflect on global health issues. The chapter also includes an expanded treatment of advance directives and the topic of living wills. The bereavement section updates the theoretical perspectives on attachment theory, reflecting the latest research in this area.

Finally, in the chapter on creativity, we completely reorganized our coverage to give expanded treatment to successful aging and slightly less attention to the specifics

of the creativity and aging model. The new successful aging sections expand on the traditional definitions of this term and include greater emphasis on social context. We found the World Health Organization’s model of successful aging to provide a particularly useful framework, and present this in detail. In our last section, on creativity and aging, we now discuss the concept of “lastingness” as the enduring quality of the work of late life creative individuals. Once again, we highlight the fact that anyone can leave a legacy, whether eminently creative or not. We leave our readers with what we hope are inspirational messages that will guide them through their own future development.

## Supplements

Wiley is pleased to offer an online resource containing a wealth of teaching and learning materials at <http://www.wiley.com/college/whitbourne>.

## Website Links

References in this edition show the websites that students and instructors can consult to gather updated information on changes in the field.

## INSTRUCTOR RESOURCES

### Instructor's Manual

The content in the Instructor’s Manual reflects the 40 years of experience that Susan has in teaching this course. You will find chapter outlines, key terms, learning objectives, and lecture suggestions. We have updated our suggestions for videos and also provide instructors with resources for films, music, and literature.

### PowerPoint Slides

Prepared for use in lectures, we provide you with a complete set of PowerPoint slides tested in Susan’s class and designed specifically for this book. Instructors can easily adapt them for their own specific needs.

### Test Bank

Instructors have access to a complete downloadable test bank that includes 50 questions in each chapter that follow the order in which concepts are presented in the text. Each multiple-choice question is labeled according to the

concept it tests, along with its difficulty level (based on class testing). We include short answer and essay questions that correspond with each section of the chapter. Because they are in convenient Microsoft Word format, instructors can adapt them to their own particular needs.

## ACKNOWLEDGMENTS

Our first set of acknowledgments goes to our families. Husbands Richard O'Brien and Erik Gleason have graciously provided important support that allowed us to spend the many hours we needed over the period of a year to revise the book. Jennifer O'Brien, daughter and sister, is a wonderful sounding board for our ideas; as she continues her career in clinical psychology, we look forward to continued "collaboration" with her. We would also like to thank the newest members of our family—namely Theodore James Gleason, age 2 at the time of this writing, and Scarlett Beth Gleason, who is now just a few months old. Susan is thrilled to be a grandmother, experiencing the joys of this special status on a first-hand basis.

Throughout the writing of this book, students in the Psychology of Aging class at the University of Massachusetts Amherst provided valuable insights and observations. As we were revising the book and preparing the lectures, student continued to provide us with fresh perspectives. Their good humor, patience, and willingness to experiment with some new ideas have made it possible to add the all-important student viewpoint to the finished product. We also appreciate the contributions of Susan's graduate teaching assistants, who serve as sounding boards in her preparation and review of lecture content.

We feel extremely fortunate to have had the guidance of editor Chris Johnson at John Wiley & Sons. He helped us prepare this and previous editions as well. His insights, support, and friendly advice have been central to our ability to maintain the book's strength while widening its appeal. We would also like to give special thanks to our associate editor, Kristen Mucci. She maintains the tradition of Wiley's efficiency and helpful attention that we have had the good fortune to receive throughout the revision process. Photo editor, Billy Ray, helped us tremendously in meeting our requests for great illustrative material. We feel particularly grateful to our production editor Yee Lyn Song, who once again in this edition provided helpful, friendly, and thoughtful feedback. The marketing team and sales representatives are in contact with us on a regular basis to ensure that you and your colleagues receive the best

service, and that your students are given the best options to meet the instructor's course requirements. Finally, the work of designer Kenji Ngieng guaranteed that the book's design is attractive and pedagogically presented. These individuals on the Wiley team provide behind-the-scenes help that every author knows is invaluable to the creation of an excellent text.

Our final thanks go to the reviewers who provided helpful comments and suggestions throughout the revision process. Their insightful observations and thoughtful proposals for changes helped us tighten and focus the manuscript and enhance the discussion of several key areas of interest in the field. Thank you to Alex Bishop (Oklahoma State University), Sue Burdett-Robinson (Hardin-Simmons University), Alvin House (Illinois State University), Gary Montgomery (The University of Texas-Pan American), and Nancy Partika (Triton College). We have also benefited from informal reviews provided by our colleagues who use the book in their teaching. We greatly appreciate their helpful suggestions.

In conclusion, we hope that we have given you something to look forward to as you venture into the fascinating field of adult development and aging and that the subsequent pages of this book will fulfill these expectations. We aim to present a comprehensive but clear picture of the area and hope that you will be able to apply this knowledge to improving your own life and the lives of the older adults with whom you may be preparing to work. We hope you will come away from the course with a positive feeling about what you can do to "age better" and with a positive feeling about the potentialities of later life. And maybe, just maybe, as has happened on many past occasions with people who read this book and take our courses, you will decide to pursue this field and we can welcome you as colleagues in the coming years.

Finally, we would like to comment on the process of working together as a mother-daughter team. The first author was pregnant with the second author when she embarked on her first textbook in the field, the precursor to the present volume. Little did she know that the child she was about to have would become a psychologist, much less a specialist in aging. We greatly enjoy writing this book, and are proud and happy to be able to share our perspectives with you, the reader.

Susan Krauss Whitbourne, Ph.D.  
 Stacey B. Whitbourne, Ph.D.  
 November 2013

## ABOUT THE AUTHORS

**Susan Krauss Whitbourne**, Ph.D., professor of psychology at the University of Massachusetts Amherst, received her Ph.D. in developmental psychology from Columbia University in 1974 and completed a postdoctoral training program in clinical psychology at the University of Massachusetts at Amherst, having joined the faculty there in 1984. Her previous positions were as associate professor of education and psychology at the University of Rochester (1975–1984) and assistant professor of psychology at SUNY College at Geneseo. Formerly the Psychology Departmental honors coordinator at the University of Massachusetts Amherst, she is director of the Office of National Scholarship Advisement where she advises students who apply for the Rhodes, Marshall, Fulbright, Truman, and Goldwater Scholarships, among others. In addition, she is faculty advisor to the University of Massachusetts Chapter of Psi Chi, a position for which she was recognized as the Eastern Regional Outstanding Advisor for the year 2001 and as the Florence Denmark National Faculty Advisor in 2002. She served as eastern region vice president of Psi Chi in 2006–07 and as chair of the program committee for the National Leadership Conference in 2009. Her teaching has been recognized with the College Outstanding Teacher Award in 1995 and the University Distinguished Teaching Award in 2001. Her work as an advisor was recognized with the Outstanding Academic Advisor Award in 2006. In 2003, she received the American Psychological Association (APA) Division 20 (Adult Development and Aging) Master Mentor Award and the Gerontological Society of America (GSA) Behavioral and Social Sciences Distinguished Mentorship Award.

Over the past 20 years, Dr. Whitbourne has held a variety of elected and appointed positions in APA Division 20 including president (1995–96), treasurer (1986–89),



secretary (1981–84), program chair (1997–98), education committee chair (1979–80), Student Awards Committee chair (1993–94), Continuing Education Committee chair (1981–82), and Elections Committee chair (1992–93). She has chaired the Fellowship Committee and serves as the Division 20 representative to the APA Council (2000–2006 and 2009–present). She is a fellow of Divisions 1 (General Psychology), 2 (Teaching of Psychology), 9 (Society for the Study of Social Issues), 12 (Clinical Psychology), 20, and 35 (Society for the Psychology of Women). She served on the APA Committee on Structure and Function of Council, chaired the Policy and Planning Board in 2007, served on the APA Membership Board, chairs Women's Caucus and Coalition of Scientists and Applied Researchers in Psychology, and is now on the Board of Educational Affairs. In 2011, her contributions were recognized with an APA Presidential Citation.

Dr. Whitbourne is also a fellow of the American Psychological Society and the Eastern Psychological Association, for which she served on the Executive Board. She is a fellow of the Gerontological Society of America, and chairs the Behavioral and Social Sciences Fellows Committee. She is past president of the Council of Professional Geropsychology Training Programs. A founding member of the Society for the Study of Human Development, she was its president from 2005 to 2007. She is also a founding member of the Society for the Study of Emerging Adulthood. She also serves on the Board of Directors of the National Association of Fellowship Advisors. In her home of Amherst, Massachusetts, she has served on the Council on Aging (2004–07) and was the president of the Friends of the Amherst Senior Center (2007–09).

Her publications include 15 published books, many in multiple editions, and more than 140 journal articles and chapters, including articles in *Psychology and Aging*, *Psychotherapy*, *Developmental Psychology*, *Journal of Gerontology*, *Journal of Personality and Social Psychology*, and *Teaching of Psychology*, and chapters in the *Handbook of the Psychology of Aging*, *Clinical Geropsychology*, *Comprehensive Clinical Psychology (Geropsychology)*, the *Encyclopedia of Psychology*, and the *International Encyclopedia of the Social and Behavioral Sciences*. She has been a consulting editor for *Psychology and Aging*, serves on the editorial board of the *Journal of Gerontology* and was a consulting editor for *Developmental Psychology*. She is editor-in-chief of the *Wiley-Blackwell Encyclopedia of Aging*. Her presentations at professional conferences number over 250 and include several invited addresses, among them the APA G. Stanley Hall Lecture in 1995, the EPA Psi Chi Distinguished Lecture in 2001, and the SEPA Invited Lecture in 2002. In addition to her professional writing, she writes a blog

for *Psychology Today* called “Fulfillment at Any Age,” and posts to the Huffington Post “Post 50” website.

**Stacey B. Whitbourne**, Ph.D., received her Ph.D. in social and developmental psychology from Brandeis University in 2005 where she was funded by a National Institute on Aging training fellowship. She completed her post-doctoral fellowship at the Boston University School of Public Health, Department of Epidemiology, funded by a National Institute on Aging Grant and a Department of Veterans Affairs Rehabilitation Research and Development Service Grant. Currently, she is a research health scientist at the Massachusetts Veterans Epidemiology and Research Information Center (MAVERIC), an independent research center housed within the VA Boston Healthcare System. She also serves as program director for the Million Veteran Program, a longitudinal health and genomic cohort funded by

the Department of Veteran’s Affairs Office of Research and Development. In addition, she is an instructor of medicine at Harvard Medical School and an associate epidemiologist at the Division of Aging at Brigham and Women’s Hospital. The author of several published articles, she is also a coauthor on a chapter for the Sage Series on Aging in America. She is a member of the American Psychological Association Division 20 and the Gerontological Society of America. A member of the Membership Committee of Division 20, she has also given more than 30 presentations at national conferences. As an undergraduate, she received the Psi Chi National Student Research Award. In graduate school, she was awarded the Verna Regan Teaching Award and an APA Student Travel Award. She has taught courses on adult development and aging at Brandeis University and the University of Massachusetts Boston.



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# PREFACE

**E**veryone ages. This very fact should be enough to draw you into the subject matter of this course, whether you are the student or the instructor. Yet, for many people, it is difficult to imagine the future in 50, 40, or even 10 years from now. The goal of our book is to help you imagine your future and the future of your family, your friends, and your society. We have brought together the latest scientific findings about aging with a more personal approach to encourage you to take this imaginative journey into your future.

The fifth edition of *Adult Development and Aging: Biopsychosocial Perspectives* incorporates material that we believe is vital to your understanding of this rapidly developing and fascinating field of study. Much of what you will read comes directly from Susan's classroom teaching of the Psychology of Aging course at the University of Massachusetts Amherst. She continues to incorporate her day-to-day teaching of the course into the text, which keeps the material current, fresh, and engaging. At the same time, her active involvement in research on the psychology of adult development and aging gives her the ability to sift through the available findings and pull out those that are central to an understanding of individuals as they change from the years of early adulthood through late life.

Stacey was inspired to pursue the field of aging after taking her mother's course in 1999. She continued her graduate work in social and developmental psychology, focusing on cognitive functioning in later adulthood. Stacey is the program director for a major national initiative that is building a health and genomic database for future studies of military veterans. Having also taught adult development and aging at Brandeis University and the University of Massachusetts Boston, she is also attuned to student needs and interests.

We are proud to say that the addition of Stacey as a coauthor brings a third generation into the field in a tradition begun by Theodore C. Krauss, M.D., Susan's father, an innovator in geriatric medicine. Susan became interested

in the scholarly field of aging as an undergraduate when she decided to write a paper on personality and adaptation in a developmental psychology course. At the same time, her father's professional activities had a profound influence and made the choice of gerontology (the scientific study of aging) a natural one.

It is our hope and belief that you will find yourself as engrossed in the psychology of adult development and aging as we are. Not only is everyone around you aging, but also the issues that researchers in the field examine range all the way from the philosophical to the practical. Why do living things age? Is there a way to slow down the aging process? How will society deal with the aging of the Baby Boomers? How will job markets be affected by an aging society? Will the young adults of today age differently than did their parents and grandparents? Bringing it to a personal level, as you take the course, you'll start to ask questions about your own life. What challenges await you as you begin your career? What will it be like to start a family? How will you manage the transition into your early adulthood as you leave college behind to pursue your own life? All of these, and more, are questions that you will find yourself asking as you explore the many complexities of the process that causes people to change and grow throughout life. You will learn not only how people grow older but also how to grow older in a way that is healthy and satisfying.

## THEMES OF THE BOOK

The biopsychosocial model emphasized in our text is intended to encourage you to think about the multiple interactions among the domains of biology, psychology, and sociology. According to this model, changes in one area of life have effects on changes in other areas. The centerpiece of this model is identity, your self-definition. You interpret the experiences you have through the framework provided by your identity. In turn, your experiences stimulate you to change your self-definition.

This is an exciting time to be studying adult development and aging. The topic is gaining increasing media attention and tremendous momentum as an academic discipline within life span development. The biopsychosocial model fits within the framework of contemporary approaches taking hold in the sciences in general that emphasize the impact of social context on individuals throughout all periods of life. Entirely new concepts, sets of data, and practical applications of these models are resulting in a realization of the dreams of many of the classic developmental psychologists whose work shaped the field in the early 20th century.

Adult development and aging are areas that have no national boundaries. Aging is now being recognized as a priority for researchers and policy makers around the world, not only in the United States and Canada. We can all benefit from this international perspective both for our own countries and for those of citizens around the world.

## ORGANIZATION

If you read the chapters of this book in order from start to finish, you will progress from the basics in the first three chapters to more complex issues, starting in Chapter 4, that place relatively more emphasis on the “bio,” the “psycho,” and the “social.” However, not all instructors choose to proceed in this fashion, and we have designed the book with this flexibility as an option. We emphasize the biopsychosocial model throughout, in that many of the topics, regardless of where they appear in the book, span areas as diverse, for example, as driving and diabetes.

We do recommend, though, that the last chapter you read is not the one on death and dying, as is often the case in other books in the field. Our last chapter covers successful aging. Many students and instructors have shared with us their appreciation of our ending on a “high note.” Even though death is obviously the final period of life, we each have the potential to live on after our own ending through the works we create, the legacies we leave behind, and the people whose lives we have touched. These are the themes that we would like you to take with you from this book in the years and decades ahead.

## FEATURES

### Up-to-Date Research

The topics and features in this text are intended to involve you in the field of aging from a scholarly and personal perspective. You will find that the most current research is presented throughout the text, with careful and detailed

explanations of the studies that highlight the most important scholarly advances. We have given particular attention to new topics and approaches, including neuroscience and genetics, as well as continuing to bring to students the latest advances in cognition, personality, relationships, and vocational development as well as highlighting sociocultural influences on development, including race, ethnicity, and social class.

### Aging Today

Susan writes a highly popular *Psychology Today* blog entitled *Fulfillment at Any Age*. Each chapter opens with a condensed version of one of the blog entries relevant to that chapter’s content. These informal chapter openings will stimulate students to think about the academic material they will read in the subsequent pages, and in some cases, include practical self-help tips so popular with readers.

### Engaging Figures and Tables

Each chapter is illustrated with photographs, figures, and tables intended to bring a strong visual element into the text. Many of these figures clearly summarize important research findings and theoretical models. Our selection of these materials connects to the PowerPoint slides that instructors can download from the Wiley website.

### Contemporary Approach

With coauthors literally one generation apart, it’s been our goal to find the balance between the “professor” and the “student” perspectives. As a result, you will find many current examples relevant to people in your age group, whether you’re a returning student or a student of traditional college age. Instructors, too, will find material that they can relate to their own experiences, whether they are relative newcomers or more seasoned academics.

## STUDENT LEARNING AIDS

### Glossary Terms

We have made a concerted effort in this edition to provide a large number of glossary terms, indicated in bold in each chapter, and listed at the end of the book. Although it may seem like you will have a great many terms to memorize, the fact of the matter is that you will need to learn them anyway, and by having them provided in your glossary, you’ll find it easier to spot them when it comes time to

review for your exams. Susan finds that her students like to study from flashcards that they make up, and if you find this a useful study tool, the glossary terms will make that process much more straightforward. The majority of these terms relate specifically to adult development and aging, but where we felt it was helpful for you to review a term that you may not have encountered for a while, we also included several terms of a more general nature.

## Numbered Summaries

You will find a numbered summary for each chapter that will supplement your studying and help you narrow down your reviewing to the chapter's main points. Together with the glossary terms, these will give you a comprehensive overview, though they will help you the most if you actually read the chapters themselves.

## CHANGES IN THE FIFTH EDITION

The first edition of *Adult Development and Aging: Biopsychosocial Perspectives* was intended to provide a fresh and engaging approach to the field of the psychology of adult development and aging by focusing on three themes: a multidisciplinary approach, positive images of aging, and the newest and most relevant research. We continue this tradition in the fifth edition because we want you, our readers, to feel as connected to the material as possible. Our thinking is that students will be more motivated to complete their reading if they like the text and feel that they can relate to it. At the same time, instructors will find their job that much easier because students sitting in their classrooms will come to class ready to discuss what they've read.

Instructors who have developed their course based on earlier editions will not need to change the basic structure of their lectures and assignments. However, to reflect this ever-changing field, we shifted material within the chapters, in some cases deleting topics that by now are no longer considered relevant in order to make room to cover the newer approaches that have come into prominence within the past three years.

Although many of the classics remain, we have included nearly 500 references from the past 3 years, up through early 2013. In virtually all cases where we reference population data, we rely on sources from 2012 or 2013. We also give expanded coverage to global population and health data in keeping with our stated goal of providing an international perspective.

We have added a number of specific topics that expand the potential for this course to reach students interested

in neuroscience, clinical psychology, social psychology, health, and applied psychology. In taking on these new topics, we are sensitive to the need to keep the overall length of the book the same, so we have dropped other areas that are now past their prime.

In the area of statistics, within the research methods chapter, we now include a section on multivariate analyses that explains the use of structural equation modeling and path analysis. These are topics that are now becoming part of the standard literature in many areas of the psychology of aging, if not psychology in general. We also expand our treatment of research methods to include epidemiology and meta-analysis, both of which are critical to understanding, again, many of the findings we present throughout the book. Because we draw heavily from several large-scale studies such as MIDUS and Whitehall II, we also explain them in the early chapters of the book.

Within the section on the nervous system, we cover brain scanning methods as well as expanded treatment of plasticity models. We include new research on sleep and memory and the brain's default network. The chapter on health now reviews measurement of functional activity (ADLs and IADLs), and we renamed the section on dementia "Neurocognitive Disorders," reflecting the changing terminology in DSM-5.

Our chapters on cognition underwent significant revision, though we have kept the basic structure the same. Specifically, we now include new sections on videogames and aging, have expanded the treatment of driving and aging, cover executive functioning and neuropsychological assessment, and include the latest research on using virtual reality training to help older adults compensate for memory loss. We have added new theories of intelligence and include a detailed discussion of the WAIS-IV, which was a radical departure from previous versions of the WAIS. New research on reading and aging, bilingualism, and cognitive plasticity also make these chapters timely and relevant.

Our coverage of personality and aging has been revised to discuss minority identity issues, the emerging field of narrative research, and changes in the approach to studying attachment in adulthood and later life. We have, of course, included the most up-to-date coverage of the personality and health relationships.

In the relationships and family chapter, which is among the favorites of students who take this class, we have expanded our treatment of cohabitation, same-sex families, and the intergenerational solidary and ambivalence models. We have added new studies on "helicopter parents" as well as several that focus on adult children who return home to live with their parents. Widowhood was previously broken up between the relationship and bereavement chapters; we now present the topic in its entirety within the context of

family. Adding to our coverage of long-term relationships, we also discuss the enduring dynamics model of intimacy.

Within the vocational development chapter, we focus on the latest findings on work–family relations, revising the previous edition to examine the differing models with the most recent research as well as touching on the topic of family-friendly workplaces. We address the issue of employment among military veterans, and cover several areas of work stress, including workplace bullying and emotional labor. The fascinating topic of vocations as “callings” also allows us to provide a new perspective on vocational satisfaction. Within the section on leisure, we also present studies that examine the travel patterns of retired adults. Our coverage of the financing of pensions and Social Security now includes sections on the changes occurring in Europe and how they affect the global economy.

The entire chapter on mental health follows the 2013 publication of psychiatry’s newest diagnostic manual, the DSM-5. In addition, we present data from the most recent models on aging and psychopathology. We include the use of telepsychology in the treatment of older adults, a field that is rapidly gaining momentum in clinical psychology in general. In the area of elder abuse, we present new data gathered since the last edition that clarifies the types and prevalence of this tragic situation.

In the long-term care chapter, we have reorganized the sections to make the distinctions among types of settings more clear, and also include a section on “aging in place.” We look once again at the abuses within nursing homes and also present the positive side of new models of care. An important topic in this chapter is health care (in the U.S.) and the future of Medicare, which we present in a way that will help students realize why this is of such vital concern to them, regardless of their age. We also culled through the many statistical compilations of data on nursing homes, which is surprisingly difficult to find, and summarize the numbers in a way that drives home their importance.

The chapter on death and dying contains many of the same topics as previous editions, but is slightly reorganized to make the organization of topics clearer to the reader. We also provide an update on the international data on mortality as these reflect on global health issues. The chapter also includes an expanded treatment of advance directives and the topic of living wills. The bereavement section updates the theoretical perspectives on attachment theory, reflecting the latest research in this area.

Finally, in the chapter on creativity, we completely reorganized our coverage to give expanded treatment to successful aging and slightly less attention to the specifics

of the creativity and aging model. The new successful aging sections expand on the traditional definitions of this term and include greater emphasis on social context. We found the World Health Organization’s model of successful aging to provide a particularly useful framework, and present this in detail. In our last section, on creativity and aging, we now discuss the concept of “lastingness” as the enduring quality of the work of late life creative individuals. Once again, we highlight the fact that anyone can leave a legacy, whether eminently creative or not. We leave our readers with what we hope are inspirational messages that will guide them through their own future development.

## Supplements

Wiley is pleased to offer an online resource containing a wealth of teaching and learning materials at <http://www.wiley.com/college/whitbourne>.

## Website Links

References in this edition show the websites that students and instructors can consult to gather updated information on changes in the field.

## INSTRUCTOR RESOURCES

### Instructor's Manual

The content in the Instructor’s Manual reflects the 40 years of experience that Susan has in teaching this course. You will find chapter outlines, key terms, learning objectives, and lecture suggestions. We have updated our suggestions for videos and also provide instructors with resources for films, music, and literature.

### PowerPoint Slides

Prepared for use in lectures, we provide you with a complete set of PowerPoint slides tested in Susan’s class and designed specifically for this book. Instructors can easily adapt them for their own specific needs.

### Test Bank

Instructors have access to a complete downloadable test bank that includes 50 questions in each chapter that follow the order in which concepts are presented in the text. Each multiple-choice question is labeled according to the



concept it tests, along with its difficulty level (based on class testing). We include short answer and essay questions that correspond with each section of the chapter. Because they are in convenient Microsoft Word format, instructors can adapt them to their own particular needs.

## ACKNOWLEDGMENTS

Our first set of acknowledgments goes to our families. Husbands Richard O'Brien and Erik Gleason have graciously provided important support that allowed us to spend the many hours we needed over the period of a year to revise the book. Jennifer O'Brien, daughter and sister, is a wonderful sounding board for our ideas; as she continues her career in clinical psychology, we look forward to continued "collaboration" with her. We would also like to thank the newest members of our family—namely Theodore James Gleason, age 2 at the time of this writing, and Scarlett Beth Gleason, who is now just a few months old. Susan is thrilled to be a grandmother, experiencing the joys of this special status on a first-hand basis.

Throughout the writing of this book, students in the Psychology of Aging class at the University of Massachusetts Amherst provided valuable insights and observations. As we were revising the book and preparing the lectures, student continued to provide us with fresh perspectives. Their good humor, patience, and willingness to experiment with some new ideas have made it possible to add the all-important student viewpoint to the finished product. We also appreciate the contributions of Susan's graduate teaching assistants, who serve as sounding boards in her preparation and review of lecture content.

We feel extremely fortunate to have had the guidance of editor Chris Johnson at John Wiley & Sons. He helped us prepare this and previous editions as well. His insights, support, and friendly advice have been central to our ability to maintain the book's strength while widening its appeal. We would also like to give special thanks to our associate editor, Kristen Mucci. She maintains the tradition of Wiley's efficiency and helpful attention that we have had the good fortune to receive throughout the revision process. Photo editor, Billy Ray, helped us tremendously in meeting our requests for great illustrative material. We feel particularly grateful to our production editor Yee Lyn Song, who once again in this edition provided helpful, friendly, and thoughtful feedback. The marketing team and sales representatives are in contact with us on a regular basis to ensure that you and your colleagues receive the best

service, and that your students are given the best options to meet the instructor's course requirements. Finally, the work of designer Kenji Ngieng guaranteed that the book's design is attractive and pedagogically presented. These individuals on the Wiley team provide behind-the-scenes help that every author knows is invaluable to the creation of an excellent text.

Our final thanks go to the reviewers who provided helpful comments and suggestions throughout the revision process. Their insightful observations and thoughtful proposals for changes helped us tighten and focus the manuscript and enhance the discussion of several key areas of interest in the field. Thank you to Alex Bishop (Oklahoma State University), Sue Burdett-Robinson (Hardin-Simmons University), Alvin House (Illinois State University), Gary Montgomery (The University of Texas-Pan American), and Nancy Partika (Triton College). We have also benefited from informal reviews provided by our colleagues who use the book in their teaching. We greatly appreciate their helpful suggestions.

In conclusion, we hope that we have given you something to look forward to as you venture into the fascinating field of adult development and aging and that the subsequent pages of this book will fulfill these expectations. We aim to present a comprehensive but clear picture of the area and hope that you will be able to apply this knowledge to improving your own life and the lives of the older adults with whom you may be preparing to work. We hope you will come away from the course with a positive feeling about what you can do to "age better" and with a positive feeling about the potentialities of later life. And maybe, just maybe, as has happened on many past occasions with people who read this book and take our courses, you will decide to pursue this field and we can welcome you as colleagues in the coming years.

Finally, we would like to comment on the process of working together as a mother-daughter team. The first author was pregnant with the second author when she embarked on her first textbook in the field, the precursor to the present volume. Little did she know that the child she was about to have would become a psychologist, much less a specialist in aging. We greatly enjoy writing this book, and are proud and happy to be able to share our perspectives with you, the reader.

Susan Krauss Whitbourne, Ph.D.  
Stacey B. Whitbourne, Ph.D.  
November 2013

## ABOUT THE AUTHORS

**Susan Krauss Whitbourne**, Ph.D., professor of psychology at the University of Massachusetts Amherst, received her Ph.D. in developmental psychology from Columbia University in 1974 and completed a postdoctoral training program in clinical psychology at the University of Massachusetts at Amherst, having joined the faculty there in 1984. Her previous positions were as associate professor of education and psychology at the University of Rochester (1975–1984) and assistant professor of psychology at SUNY College at Geneseo. Formerly the Psychology Departmental honors coordinator at the University of Massachusetts Amherst, she is director of the Office of National Scholarship Advisement where she advises students who apply for the Rhodes, Marshall, Fulbright, Truman, and Goldwater Scholarships, among others. In addition, she is faculty advisor to the University of Massachusetts Chapter of Psi Chi, a position for which she was recognized as the Eastern Regional Outstanding Advisor for the year 2001 and as the Florence Denmark National Faculty Advisor in 2002. She served as eastern region vice president of Psi Chi in 2006–07 and as chair of the program committee for the National Leadership Conference in 2009. Her teaching has been recognized with the College Outstanding Teacher Award in 1995 and the University Distinguished Teaching Award in 2001. Her work as an advisor was recognized with the Outstanding Academic Advisor Award in 2006. In 2003, she received the American Psychological Association (APA) Division 20 (Adult Development and Aging) Master Mentor Award and the Gerontological Society of America (GSA) Behavioral and Social Sciences Distinguished Mentorship Award.

Over the past 20 years, Dr. Whitbourne has held a variety of elected and appointed positions in APA Division 20 including president (1995–96), treasurer (1986–89),



secretary (1981–84), program chair (1997–98), education committee chair (1979–80), Student Awards Committee chair (1993–94), Continuing Education Committee chair (1981–82), and Elections Committee chair (1992–93). She has chaired the Fellowship Committee and serves as the Division 20 representative to the APA Council (2000–2006 and 2009–present). She is a fellow of Divisions 1 (General Psychology), 2 (Teaching of Psychology), 9 (Society for the Study of Social Issues), 12 (Clinical Psychology), 20, and 35 (Society for the Psychology of Women). She served on the APA Committee on Structure and Function of Council, chaired the Policy and Planning Board in 2007, served on the APA Membership Board, chairs Women's Caucus and Coalition of Scientists and Applied Researchers in Psychology, and is now on the Board of Educational Affairs. In 2011, her contributions were recognized with an APA Presidential Citation.

Dr. Whitbourne is also a fellow of the American Psychological Society and the Eastern Psychological Association, for which she served on the Executive Board. She is a fellow of the Gerontological Society of America, and chairs the Behavioral and Social Sciences Fellows Committee. She is past president of the Council of Professional Geropsychology Training Programs. A founding member of the Society for the Study of Human Development, she was its president from 2005 to 2007. She is also a founding member of the Society for the Study of Emerging Adulthood. She also serves on the Board of Directors of the National Association of Fellowship Advisors. In her home of Amherst, Massachusetts, she has served on the Council on Aging (2004–07) and was the president of the Friends of the Amherst Senior Center (2007–09).

Her publications include 15 published books, many in multiple editions, and more than 140 journal articles and chapters, including articles in *Psychology and Aging*, *Psychotherapy*, *Developmental Psychology*, *Journal of Gerontology*, *Journal of Personality and Social Psychology*, and *Teaching of Psychology*, and chapters in the *Handbook of the Psychology of Aging*, *Clinical Geropsychology*, *Comprehensive Clinical Psychology (Geropsychology)*, the *Encyclopedia of Psychology*, and the *International Encyclopedia of the Social and Behavioral Sciences*. She has been a consulting editor for *Psychology and Aging*, serves on the editorial board of the *Journal of Gerontology* and was a consulting editor for *Developmental Psychology*. She is editor-in-chief of the *Wiley-Blackwell Encyclopedia of Aging*. Her presentations at professional conferences number over 250 and include several invited addresses, among them the APA G. Stanley Hall Lecture in 1995, the EPA Psi Chi Distinguished Lecture in 2001, and the SEPA Invited Lecture in 2002. In addition to her professional writing, she writes a blog

for *Psychology Today* called “Fulfillment at Any Age,” and posts to the Huffington Post “Post 50” website.

**Stacey B. Whitbourne**, Ph.D., received her Ph.D. in social and developmental psychology from Brandeis University in 2005 where she was funded by a National Institute on Aging training fellowship. She completed her post-doctoral fellowship at the Boston University School of Public Health, Department of Epidemiology, funded by a National Institute on Aging Grant and a Department of Veterans Affairs Rehabilitation Research and Development Service Grant. Currently, she is a research health scientist at the Massachusetts Veterans Epidemiology and Research Information Center (MAVERIC), an independent research center housed within the VA Boston Healthcare System. She also serves as program director for the Million Veteran Program, a longitudinal health and genomic cohort funded by

the Department of Veteran’s Affairs Office of Research and Development. In addition, she is an instructor of medicine at Harvard Medical School and an associate epidemiologist at the Division of Aging at Brigham and Women’s Hospital. The author of several published articles, she is also a coauthor on a chapter for the Sage Series on Aging in America. She is a member of the American Psychological Association Division 20 and the Gerontological Society of America. A member of the Membership Committee of Division 20, she has also given more than 30 presentations at national conferences. As an undergraduate, she received the Psi Chi National Student Research Award. In graduate school, she was awarded the Verna Regan Teaching Award and an APA Student Travel Award. She has taught courses on adult development and aging at Brandeis University and the University of Massachusetts Boston.



# 1

## Themes and Issues in Adult Development and Aging

AGING TODAY

### What's Your Real Age?

#### TOPICS

**Themes and issues**

**Models of development**

**Methods**

**Physical changes**

**Health**

**Memory and attention**

**Higher-order cognition**

**Personality**

**Relationships**

**Work and retirement**

**Mental health**

**Long-term care**

**Death and dying**

**Successful aging**

If you want to know your true age, don't look at the calendar. The calendar tells you what your chronological age is, but this number may be far from accurate in defining who you are. All you know from your chronological age is how many times you've sat on the earth while it orbits around the sun. As an index of aging, chronological age is deeply flawed.

Perhaps the biggest reason for this is that industrialized societies such as our own measure productivity in terms of time. Agrarian societies kept track of time by referring to markers in the seasonal variations of the sun, moon, and planets. As society became industrialized, people increasingly relied on clocks to set the pace of work. Age then became part of that industrialized system. Atomic clocks that measure the tiniest fraction of a second give us no respite from time's arrow.

Just as age and time become woven into our society's fabric, so too is the way that society defines each of us in terms of this magic number. Did you ever notice that the first piece of information in a news article or even a wedding announcement, right after the subject's name, is his or her age? If you'd rather your neighbors didn't know your exact age, you'd better be sure not to get involved in a jaywalking accident or fender bender. Your age will follow your name, and there's no way around that.

Yet, age may not always tell us very much about a person. Think of the older-than-her-years, hypermature 15-year-old who could easily pass for 22. How about the older adult who lives down the street from you, whose sprightly step would rival that of someone 40 years her junior? In thinking about yourself, as Satchel Paige once said, "How old would you be if you didn't know how old you was?"

Perhaps the best way to test your functional age is to ask yourself this very simple question: How old do you feel? Forget what the calendar says, and even forget what your functional age is. The age you feel may very well be the most important factor in determining your health, happiness, and longevity. Research consistently demonstrates that the people who are happiest and best adjusted in their middle and later years are those who don't focus on their limitations, worry about their memories, or become preoccupied with whether others view them as old. Being able to subtract a few years from this subjective age, or age that you feel, may actually buy you a few more objective years of healthy and productive life.

Posted by Susan Whitbourne and Stacey Whitbourne

## 2 Themes and Issues in Adult Development and Aging

Aging affects everyone. Your aging process began the moment you were born. If you are of traditional college age, you're undergoing a time of transition that lasts from adolescence to adulthood. The concept of being an adult may be new to you, and the idea of being an older adult may seem far off. Our purpose in writing this book is to help you think about your own aging as well as the aging process more generally. You may have decided to take this course to help you understand your aging family members or trends in society; however, before long, we hope that you think about what will happen to you as you yourself get older.

Let's start by asking you what comes to mind when you think of your current age. Is it an important part of who you are or do you not think about your actual age? Next, ask yourself whether you consider yourself to be an "adult." What does the word adult mean to you? Is it a term you would use to describe others who are older than you are now? Finally, what are your thoughts about the aging process? When you think of older adults, do you immediately regard them as unable to care for themselves? What is the "typical" older adult like, in your eyes?

Just by thinking about these questions, you've already started to focus on what age means in terms of your overall sense of self. These are the types of questions that we'll explore throughout the book. Even as we discuss in-depth the effects of the aging process throughout adulthood, we will often come back and question how much we really know about a person based on age alone. We'll also show you that some age distinctions are almost arbitrary. Someone decided that a certain age means you're in a certain stage of life; from that point forward, people attribute a great deal of meaning to that particular number. In reality, however, the aging process isn't completely linked to the passage of time alone.

Our goal is to encourage you to take personal explorations as you gain factual information about the aging process. Not only will the material help you in your career (regardless of what field you go into), but it will also help you understand yourself and how you change over time. You'll also learn, perhaps surprisingly, that you don't have to sit back and let the aging process passively affect you. There are active steps you can take to make sure that you keep functioning as well as possible for as long as possible throughout your entire life. With a few simple precautions, you can avoid the illnesses that limit people's ability to enjoy themselves into their later decades.

If you're a traditional college-age student heading into your twenties, we hope to help you appreciate that it is never too early to start incorporating these changes into your lifestyle. And for our readers of nontraditional college age, we hope to help you see that it's never too late to initiate behaviors that can maintain, if not enhance, your everyday

functioning. A key goal in writing this book is to involve you in the progression of your aging process and show you ways to be an active part of your own development.

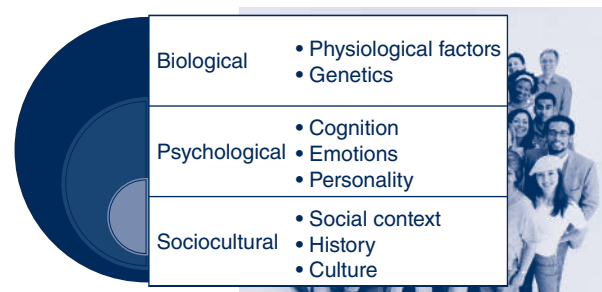
### THE BIOPSYCHOSOCIAL PERSPECTIVE

We organize the book around the **biopsychosocial perspective**, a view of development as a complex interaction of biological, psychological, and social processes. Aging is not a simple, straightforward progression through time. Your body undergoes biological changes largely influenced by your genetics or physiology. At the same time, you change psychologically in ways that reflect what's happening to your body that, in turn, affect your body's changes. All of this takes place in a social context. Holding biology and psychology constant, people age differently depending on where and when they live, whom they interact with, and what resources they have available to them.

Figure 1.1 captures this complex biopsychosocial interaction. Biological processes refer to how the body's functions and structures change throughout the aging process. We cover these changes in the chapters on normal aging and health. Psychological processes include the individual's thoughts, feelings, and behaviors related to growing older. We examine these changes in the chapters on cognition, personality, and emotions. The social processes of aging reflect the cultural, historical, and interpersonal influences on the individual. We cover these in chapters about relationships, family, work, and institutionalization. In Chapter 2, we will explore how life-span development theories grapple with explaining how these complex processes all interrelate. You'll find that there's a great deal more to aging than you probably imagined when you first started reading this chapter.

FIGURE 1.1

The Biopsychosocial Model



Digital Vision/Getty Images, Inc.

As you can see from the biopsychosocial model, we intend to go beyond “psychology” in teaching you about the processes involved in adult development and aging. In fact, **gerontology**, the scientific study of the aging process, is an interdisciplinary field. People who devote their professional lives to the study of gerontology come from many different fields—biology, medicine, nursing, sociology, history, and even the arts and literature. To be a gerontologist, applying this integrative view to your work is crucial. Knowledge, theories, and perspectives from all disciplines contribute importantly to the study of the individual over time.

To help put it all together for you as you develop throughout adulthood, we will pay special attention to the concept of **identity**. Identity is defined as a composite of how people view themselves in the biological, psychological, and social domains of life. The interaction of these domains forms an overall view of the “self.”

## FOUR PRINCIPLES OF ADULT DEVELOPMENT AND AGING

We begin our study of adult development and aging by sharing a set of four principles that form the foundation of our biopsychosocial approach (see Table 1.1). As you read the book, you’ll find that we return frequently to these principles, which we highlight when they appear in the chapter. If you begin to understand them now, you will find the course material much easier to master.

### 1. Changes Are Continuous Over the Life Span

First and foremost, changes over the life span happen in a continuous fashion. According to the **continuity principle**, the changes that people experience in later adulthood build on the experiences they had in their earlier years. This means we can never isolate the later years of life without considering the years preceding them. Since time moves in a forward direction, the changes throughout life build upon themselves in a cumulative fashion. If you were hard

**TABLE 1.1**

**The Four Principles of Adult Development and Aging**

<i>Principle</i>	<i>Meaning</i>
1. Changes are continuous over the lifespan	<i>Individuals remain the “same” even though they change</i>
2. Only the survivors grow old	<i>Aging individuals are increasingly self-selected</i>
3. Individuality matters	<i>People vary within and between age groups</i>
4. Normal aging is different from disease	<i>Intrinsic aging processes are different from those associated with illness</i>

on your body as a young adult, chances are the changes you’ll undergo when you’re older will be more negative than if you took good care of yourself.

The continuity principle also applies to the way that people think about their own identities. You know that you’re the same person you always were, despite getting older. Birthdays don’t transform you into a different person. You don’t look the same to others, but you feel essentially the “same” on the inside.

When others look at you, however, they don’t necessarily share this perspective. People don’t meet you for the first time and think about what you were like when you were younger—they see you as you are now. Unless they are close relatives or friends, they have no way of knowing what you were like when you were in your childhood or teenage years. Anyone meeting you now judges you on the basis of your current appearance because he or she has no other data from which to draw.

Similarly, when you look at a middle-aged or older adult, it’s unlikely that you judge that person on the basis of how he or she may have been in the past. You see an older woman, perhaps walking with a little difficulty, and don’t stop to think that this person used to be more vigorous and healthy. However, that very same older woman knows that she is the “same” person she’s always been. She may seem surprised, in fact, to realize that she’s seen as an “old



Robert L. Zentmaier/Photo Researchers, Inc.



Robert L. Zentmaier/Photo Researchers, Inc.



Robert L. Zentmaier/Photo Researchers, Inc.

Over the progression of time, as shown in these photos of the same man from ages 3 through 82, people may feel the same inside even though their outer appearance changes.

woman” instead of as the Jane, Barbara, or Mary she knows herself to be.

Therefore, when working with older adults, it is important to remember that they would prefer to be treated as the people they always were, rather than as “old people.” As we’ll see later, older adults are often stereotyped as weak and infirm, when in reality, they want to be viewed as individuals who’ve lived a long time. They don’t want to be stereotyped on the basis of the way they look to you right now. Some nursing home administrators, eager to remind their employees of this fact, display pictures of the residents from their younger years. The residents know they’re the same people they have always been, and it’s helpful if those who work with them are reminded of this fact as well.

## 2. Only the Survivors Grow Old

The **survivor principle** states that the people who live to old age are the ones who managed to outlive the many threats that could have caused their deaths at earlier ages. Perhaps this is obvious because clearly, to grow old, you have to not die. However, the survivor principle is a bit more complex than that. Contrary to the Billy Joel song “Only the Good Die Young,” it’s not the good who die young, but the ones who fall victim to the forces that cause people to lose their lives. Some of these are random, to be sure, such as being killed by someone else in an accident, by an act of war, or in a natural disaster. However, many other factors that lead some to survive into old age are nonrandom.

Thus, survivors not only manage to avoid random causes of their own fatalities, but also are more likely to take care of their health and not engage in risky behaviors (such as driving too fast or getting involved in crime) or use drugs and alcohol excessively. The very fact that survivors avoid death until late in life suggests they may have inherited good genes or at least managed to maintain their physical abilities (biological factors), are emotionally healthy (psychological factors), or have surrounded themselves with a good support system (social factors). These, or a combination of the three, plus a dose of good luck, allow them to be with us today.

Table 1.2 shows the five most common behaviors that prevent people from living a longer life (Kamimoto, Easton, Maurice, Husten, & Macera, 1999). We somewhat ironically call these “Five Ways to Shorten Your Life.” Most people would prefer not to shorten their lives, and certainly not to develop poor health in their later years, but many do not think about the ramifications of engaging in risky behaviors. Survivors most likely do not engage in these behaviors. Therefore, not only are they different because they may have been born healthier, but they also likely took

**TABLE 1.2**  
**Five Ways to Shorten Your Life**

- 
1. Being overweight
  2. Drinking and driving
  3. Eating inadequate fruits and vegetables
  4. Being physically inactive
  5. Smoking
- 

*Source:* Adapted from Kamimoto, L. A., Easton, A. N., Maurice, E., Husten, C. G., & Macera, C. A. (1999). Surveillance for five health risks among older adults—United States, 1993–1997. *Morbidity and Mortality Weekly Reports*, 48(SS08), 89–130.

care to maintain their health and preserve their longevity. When you consider what it takes to become an older adult, it is hard not to appreciate that the people who survive to later adulthood have some incredibly special characteristics.

The survivor principle has important theoretical implications. Clearly, all older adults who participate in research are survivors of the conditions that others did not endure. As time goes by, more and more of the older population will die. When they reach their 90s or 100s, they most likely represent a different population than their now-deceased age mates. The older they get, the more select they become in such key characteristics as physical functioning, health, intelligence, and even personality (Baird, Lucas, & Donnellan, 2010).

Consequently, when we examine differences between younger and older people, we must keep in mind that older people alive today were a special group when they were young. The younger adults have not yet been subjected to the same conditions that could threaten their lives. Some of them will die before they reach old age. Knowing who will be the survivors is almost impossible to predict meaning we may be comparing highly select older adults with a wider range of younger adults. Therefore, we cannot conclude that age “caused” the older adults to have the characteristics they have now because they might always have been a special subset of their own age group.

To help illustrate this principle, consider data on the psychological characteristic of cautiousness. One of the tried and true findings in the psychology of adult development and aging contends that older people are less likely to take risks than are younger people. Similarly, older adults are less likely to engage in criminal behavior. It’s possible that as people age they are better able to avoid behaving in ways that could bring them harm or get them arrested. Alternatively, it’s possible that they did not change at all and are the only ones left standing from their generation.



The people more likely to make risky decisions early on in life died at younger ages or were imprisoned. Certainly, those who made poor health decisions would be less likely to have survived into old age.

As a result of the survivor principle, you need to remind yourself continually throughout this book that the older adults we study may have become less risky, more honest, or better able to take care of their health. On the other hand, they may not have changed at all—only survived long enough for us to study them.

### 3. Individuality Matters

A long-held myth regarding development is that as people age, they all become alike. This view is refuted by the principle of **individuality**, which asserts that as people age, they become more different from each other. This divergence occurs in people's physical functioning, psychological performance, relationships, interest in work, economic security, and personality.

In one often-cited study, still considered a classic, researchers examined a large number of studies of aging to compare how differently older versus younger adults responded to the same measures (Nelson & Dannefer, 1992). Rather than their scores converging, they grew farther apart. Research continues to underscore the notion that individuals continue to become less alike with age. Such findings suggest that diversity becomes an increasingly prominent theme during the adult years, a point we will continue to focus on throughout this book.

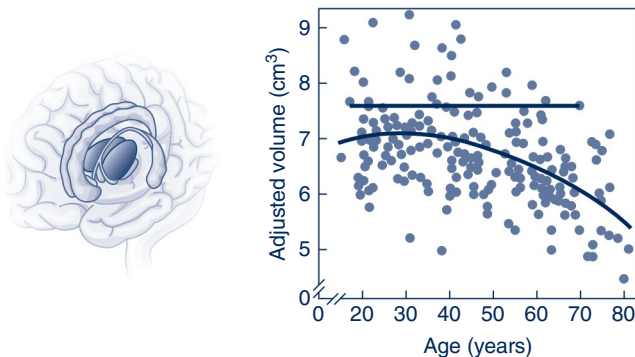
The idea of increasing divergence among older adult populations does not mean that everyone starts out at exactly the same point when they're young. There are always going to be differences within any sample of people in almost any characteristic you can name. The issue is that as people get older, these differences become magnified. The top-performing person in a sample of young adults

may be 10 points higher than the next highest performer. By the time this person reaches his or her 70s or 80s, these differences may grow by a factor of two, three, or more. In part, this is a statistical fluke. As you'll learn in Chapter 3, it's difficult to find a sample of older adults who are as close in age as are the young adults researchers tend to study (who are often within 2 or 3 years of each other). If age is related to performance, then the odds are that the older group will differ simply because they differ more in age.

However, the increasing variation among older adults isn't just a statistical artifact. Even if you had a sample of older adults who were exactly the same age, it's likely that they would differ more among themselves than they would have when they were younger because they've lived through more experiences affecting everything from their health to their psychological well-being. Those experiences have cumulative effects, causing them to change at different rates and to differing degrees.

Consider what's happened to you and the people you grew up with by this point in your life. You have made the decision to go to college, while others in your age group may have enlisted in military service. You may meet your future spouse in college, while your best friend remains on the dating scene for years. Upon graduation, some may choose to pursue graduate studies as others enter the workforce. You may or may not choose to start a family, or perhaps have already begun the process. With the passage of time, your differing experiences build upon each other to help mold the person you become. The many possibilities that can stem from the choices you make help illustrate that the permutations of events in people's lives are virtually endless. Personal histories move in increasingly idiosyncratic directions with each passing day, year, and decade of life.

There are actually two types of differences that come into play when we talk about individuality. **Interindividual differences** are differences *between* people. We've shown an example of interindividual differences in Figure 1.2. In



**FIGURE 1.2**

#### Interindividual Differences in Development

This figure shows age differences in the volume of cells in the hippocampus, a part of the brain involved in memory. The straight line shows that people in their 70s may have the same brain volumes as people in their 20s.

Source: Reprinted by permission from Macmillan Publishers Ltd: Nature Reviews Neuroscience. Hedden, T., & Gabrieli, J. D. (2004). Insights into the ageing mind: A view from cognitive neuroscience. *Nature Review Neuroscience*, 5, 87–96.

## 6 Themes and Issues in Adult Development and Aging

this figure, each dot represents the size of the hippocampus, a part of the brain involved in memory thought to grow smaller as people get older. As you can see, people of the same age can vary so dramatically from one another that they may more closely resemble people from different age groups. Follow the straight line showing two dots—one representing a 20-year-old and one representing data from a 70-year-old. The hippocampus of this 70-year-old actually equals that of at least one 20-year-old. Many of the 70-year-olds have hippocampal sizes that equal those of people in their 40s. These interindividual differences clearly show that not all 70-year-olds are alike.

As this example shows, some older adults can outperform younger adults on tasks typically shown to decline with age. This sort of occurrence happens in many areas of study. Although traditionally younger adults have faster reaction times than older adults, exceptions to the norm are common. While you may think of average-age college students as being able to run faster, lift heavier weights, or solve crossword puzzles in a shorter time than people three times their age, consider the differences between a sedentary 21-year-old and a 72-year-old triathlete. Chances are, the triathlete will outperform the sedentary adult in all categories. We will continue to explore the notion that functioning does not necessarily need to “go downhill” as people get older.

**Intra-individual differences** refer to the variations in performance within the same individual. In other words, not all systems develop at the same rate within the person. Some functions may increase over time, others decrease, and others stay the same. Even within a construct such as intelligence, an individual may show gains in one area,

losses in another, and stability in yet another domain. Intra-individual differences illustrate the fact that development can proceed in multiple directions within the same person (Baltes & Graf, 1996), a concept known as **multidirectionality**.

### 4. “Normal” Aging Is Different From Disease

The principle that **normal aging is different from disease** means that growing older doesn’t necessarily mean growing sicker. It is important for both practical and scientific reasons to distinguish between normal aging and disease. Health care specialists who work with middle-aged and older adults need to recognize and treat the onset of a disease rather than dismiss it simply as “getting older.” For example, an 80-year-old man exhibiting symptoms of depression can be successfully treated, assuming that the clinician does not write his symptoms off as a feature of normal aging. Personality development in adulthood does not inevitably lead to the depressive symptoms of lowered self-esteem, excessive guilt, changes in appetite, or lack of interest in activities. Older adults may experience some moderation in personality qualities such as becoming a bit less judgmental in relation to others. However, the development of psychological disorders for the first time in later life is not typical. Clinicians who mistakenly think that these symptoms are part of the normal aging process won’t take the proper course of treatment that could alleviate the depressed person’s suffering.

Gerontologists translate the principle that normal aging is different from disease into terms that distinguish these



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This highly fit triathlete has physical skills that would rival those of a sedentary young adult, further illustrating the principle of individual differences. He also provides an example of optimal aging.

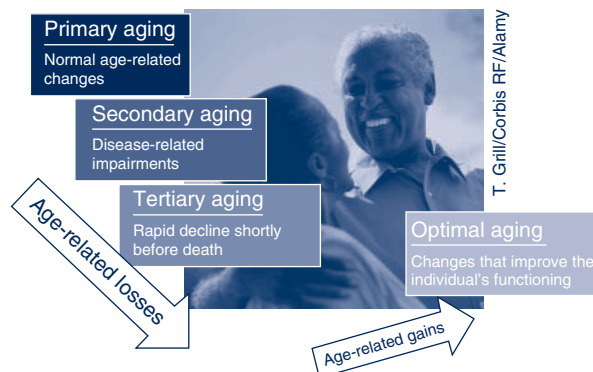
processes. **Primary aging** (or **normal aging**) refers to the normal changes over time that occur due to universal, intrinsic, and progressive alterations in the body's systems. Changes over time leading to impairment due to disease rather than normal aging are referred to as **secondary or impaired aging**. These changes are not due to universal, intrinsic processes but are a function of an abnormal set of changes afflicting a segment rather than the entirety of the older population (Aldwin & Gilmer, 1999). Skin wrinkling is an example of primary aging; the development of skin cancer in later life is an example of secondary aging. Toward the very end of life, individuals experience a rapid loss of functions across multiple areas of functioning; this is called **tertiary aging** (Gerstorff, Ram, Lindenberger, & Smith, 2013).

Primary, secondary, and tertiary aging refer to processes that, over time, accumulate, and in the absence of accident or injury, cause the individual's death. Gerontologists believe that despite the changes in the body that lead to loss, aging can also involve gains. The term **optimal aging** refers to age-related changes that improve the individual's functioning. Changes due to optimal aging may reflect the preventative or compensatory measures that adults take to counter the toll that aging would normally take on their physical and psychological functioning. However, some individuals do not even make special efforts to alter their own aging, but for reasons not always entirely clear, seem to age at a slower rate than their peers. They may be the ones who never seem to get sick right until the very end of their lives, when a sudden illness leads to their death (i.e., tertiary aging).

Throughout life, age-related losses due to primary, secondary, and tertiary aging eventually overtake age-related gains, as we show in the left side of Figure 1.3.

**FIGURE 1.3**

Age-Related Losses and Gains



## THE MEANING OF AGE

The study of aging implies that age is the major variable of interest. As we describe in more detail below, there is value in categorizing individuals in later life based on their age. At the same time, there is an arbitrariness to the numerical value attached to people based on the continuous processes that occur over time. The crossing from an age that ends in “9” to an age that ends in “0” (such as going from 39 to 40) often leads people to engage in self-scrutiny if not somewhat disturbing birthday cards from friends invoking the “over the hill” metaphor. In truth, however, the body does not change in such discrete fits and starts.

Chronological age has some value in describing a person, but like other descriptive features of a person, such as gender or eye color, it is the social meaning attached to chronological age that often outweighs any intrinsic usefulness. As we have already discussed, people of the same age can vary substantially from one another, and people of different ages can be more similar to each other than their differing age might lead you to expect. Chronological age is a number based on events in the universe that occur, and its units are not necessarily inherently tied to the aging process.

The body does keep time in a cycle that approximates a 24-hour period, but there is no evidence at the moment to suggest that this time pacemaker is related to aging. To say that chronological age (or time) “means” anything with regard to the status of the body's functioning is, based on current evidence, questionable. The popularity of such phrases as “30 being the new 20” and “60 the new 50” capture the difficulty of defining age based solely on a number.

## Using Age to Define “Adult”

Now that we have you thinking about the meaning of age, we will move on to the next challenge—the meaning of the word “adult.” Earlier, we asked you to decide whether you consider yourself an adult. When you think of that word, perhaps the synonym of “mature” comes to mind. This, in turn, may conjure up images of a person reaching a certain level of accomplishment or growth. Consider, for example, the term “mature” in reference to an apple. A mature apple is one that is ready to be eaten, and you can judge that by examining the apple's color, size, and texture. An apple's maturity level is relatively easy to measure compared to judging the maturity of humans because the complexity of the biopsychosocial processes are far more difficult to quantify.

You might think that the most logical definition of maturity should be based on physical development. Yet, you also know that a 13-year-old male who has

essentially reached his full physical development would, in contemporary Western society, be regarded as anything but an adult. Although his physical attributes define him as an adult, the psychological and social standards would not.

Perhaps a standard based on ability is a better option. Consider 16 years, the age when most people can legally drive. Or, alternatively, consider the age 18, when U.S. society ordains the person with the right to vote. Using the age of 21 presents another possible point of entry into adulthood. Because it is the age when American adults can legally drink alcohol, for many, the turning of 21 represents a defining mark of the beginning of adulthood. However, the United States is in a small minority of nations that set the drinking age at 21. Some Canadian provinces set the drinking age at 19 (though it is 18 in most); countries such as Germany, Barbados, and Portugal set it at 16. These conflicting age demarcations for even such a seemingly concrete behavior as drinking alcohol show that deciding when a person is an adult on this basis has very limited utility.

Parenthetically, the variations in the legal drinking age shown from country to country (and even within a country) illustrate the interaction of biological and sociocultural factors in setting age-based parameters around human behavior. People in Canada who are 18 years old are, on average, not all that physiologically distinct from 18-year-olds who live in France. For that matter, they are probably not even psychologically different. It's the culture that distinguishes whether they're able to drink alcohol without getting arrested.

If you're like many students, the age of 25 may hold special importance for you. This is the age where, in the United States, you can rent a car (without having to pay a tremendous surcharge). This age has no inherent meaning, but it is used by car rental companies because the chances of having an auto accident are lower after the age of 25. It's possible that a switch is flicked on a person's 25th birthday so that the unsafe driver now has become a model of good behavior on the road. However, there are statistically higher odds that people under age 25 are more likely to engage in the risky combination of drinking and driving.

Another set of criteria related to the age of adulthood pertains to when people can marry without the consent of their parents. There again, we find huge variation. Within the United States alone, the age of consent varies from state to state (in South Carolina it is 14, while other states deem 16 or 18 the appropriate age). Moreover, the age when people actually marry reflects factors such as the health of the economy; in bad economic times, the median age of marriage goes well above the age of consent. During these times, people in their 20s (or older) may find they're forced to move back in with their parents because they aren't earning sufficient income to rent or buy their own place.

Does that mean that people become less "adult" when the economy lags?

Given these contradictory definitions of "adult," it might be wise to recommend that we set the threshold into adulthood based on the individual's having reached the chronological age associated with the expectations and privileges of a given society or subculture. For example, in the United States, individuals may be considered to have reached adulthood at the age when they are eligible to vote, drink, drive, and get married. For the majority of U.S. states, the age of 21 is therefore considered the threshold to adulthood. In other countries, these criteria may be reached at the age of 18. Regardless of the varying definitions, up to as many as the first 10 or 11 years of adulthood represent the period of **emerging adulthood**, or the transition prior to assuming the full responsibilities associated with adulthood, normally the years 18 to 29 (Arnett, 2000). These responsibilities may occur during the years that follow college graduation or, for those individuals who do not attend college, when they face the need to find full employment or make family commitments.

## Divisions by Age of the Over-65 Population

Traditionally, 65 years of age has been viewed as the entry point for "old age." There was no inherent reason for the choice of this age other than that in 1889, the German Chancellor Otto von Bismarck decided to set this as the age when people could receive social insurance payments. Now, we accept age 65 without giving it much thought.

Gerontologists recognized long ago that not only was 65 an arbitrary number for defining old age, but that it also resulted in people being placed into too broad of a category when defined as older adults. All other things being equal, a 65-year-old faces very different issues than someone who is 85 or 90. There are certainly 65-year-olds in very poor health and 95-year-olds who have no serious ailments. But because, on average, 65-year-olds are so different than those who are 20 or more years older, we use a convention to break the 65-and-older category into subgroups.

The subgroups most frequently used in gerontology are **young-old** (ages 65 to 74); **old-old** (ages 75 to 84); and **oldest-old** (ages 85 and older). We shouldn't place too much credence on numbers, as we've already said, but these are good approximations for roughly categorizing the 65-and-older population. Bernice Neugarten, one of the early pioneers in psychological gerontology, proposed these distinctions in the mid-1960s, and they have remained in use to this day.

With more and more people living to the oldest-old category, though, gerontologists are reexamining the

divisions of the 65+ age group. Specifically, people over the age of 100, known as **centenarians**, are becoming more and more commonly represented in the population, as we will show later in the chapter. It will not be long before the very highest age category becomes more prominent—the **supercentenarians**, who are 110 and older. Typically, the oldest person in the world at any given time is between the ages of 114 and 116. Jeanne Louise Calment, the oldest documented living human, was 122 at the time of her death. Supercentenarian will probably retain its definition as 110 and over, though, at least for the foreseeable future.

## Functional Age

Discontented with the entire concept of chronological age, a number of gerontologists are devising a new classification system that is based not on what the calendar says but on **functional age**, which is how people actually perform (see Figure 1.4). With functional instead of chronological age as the basis for a system of studying aging, we could gain a better grasp of a person's true characteristics and abilities. When we talk about research methods in Chapter 3, we'll see further advantages to using measures other than chronological age to study the aging process.

**Biological age** is the age of an individual's bodily systems. Using biological age instead of chronological age would tell us exactly how well people are able to perform such vital functions as pumping blood through the body and getting oxygen to the lungs. With biological age, you could also help people learn how best to improve their muscle and bone strength, for example. To accomplish this,

we would need a large repository of data showing what's to be expected for each major biological function at each age. For example, we'd need to know the population values for blood pressure readings in people with different chronological ages. Then, we would assign people a "blood pressure age" according to which chronological age of healthy people their numbers most closely match. A 50-year-old whose blood pressure was in the range of normal 25- to 30-year-olds would then have a biological age that was 20 or 25 years younger than his or her chronological age.

Popular culture has certainly caught on to the notion of biological rather than chronological age. There are a multitude of online calculators in which you answer various questions to estimate how long you will live. In addition, there are slightly more sophisticated "biological age tests" that let you calculate your "lung age," for example. Though we don't have reliable biological age measures yet, these measures are becoming more sophisticated and may eventually serve a purpose.

**Psychological age** refers to the performance an individual achieves on measures of such qualities as reaction time, memory, learning ability, and intelligence (all of which are known to change with age). Like biological age, a person's performance on these tasks would be compared with those of other adults, and then scaled accordingly.

**Social age** is calculated by evaluating where people are compared to the "typical" ages expected for people to be when they occupy certain positions in life. These positions tend to center on family and work roles. For example, a grandparent would have an older social age than would a parent, although the grandparent might easily be chronologically younger than the parent.

Social age can have some interesting twists. For example, people can be grandparents in their late 20s (with a social age of 60 or older). Conversely, women can become mothers in their late 60s. In 2010, a TV series aired an episode called "Pregnant at 70." Similarly, a retiree would have an older social age than would a person still working, although again their chronological age might be in reverse order. Athletes typically retire in their 30s or earlier, depending on their sport; politicians or religious figures may not retire until their late 80s, if at all.

As stated earlier, an advantage of using functional indices of aging is that they can be more accurate than chronological age. Of course, it's much easier to use chronological age than to use these more sophisticated calculations. Furthermore, functional ages must be constantly calibrated and re-calibrated to ensure that they continue to be accurate. For example, a biological index based in part on blood pressure may require adjustments as health practitioners change the definition of what is considered "old." Changes in both medical knowledge and population norms

**FIGURE 1.4**

Alternative Indices of Aging

