

Social Gerontology  
A Multidisciplinary Perspective  
Nancy Hooyman H. Asuman Kiyak  
Ninth Edition

**Pearson New International Edition**



David McLain/Aurora Photos

# The Growth of Social Gerontology

## This chapter includes

- Definitions of aging
- Definitions of gerontology, social gerontology, and geriatrics
- Introduction to the active aging framework and the concepts of resilience, life course, and health disparities
- Description of the person–environment perspective used throughout this book
- Reasons for studying social gerontology
- Important demographic trends affecting the United States and globally
- Life expectancy, life span, and longevity in health
- Development of the field of gerontology
- Research methods and designs for studying older adults
- The importance of representative samples for social gerontological research

## The Field of Gerontology

The growing interest in understanding the process of aging has given rise to the multidisciplinary field of **gerontology**, the study of the biological, psychological, and social aspects of aging. Gerontologists include researchers and practitioners in such diverse fields as biology, medicine, nursing, dentistry, social work, physical and occupational therapy, psychology, psychiatry, sociology, economics, political science, architecture, pharmacy, and anthropology. These individuals are concerned with multiple aspects of aging, from studying and describing the cellular processes involved to seeking ways to improve the quality of life for older people and their families. **Geriatrics** focuses on how to prevent or manage the diseases that often occur as people age. As a specialty within the health professions, geriatrics is receiving more attention with the increased

From Chapter 1 of *Social Gerontology: A Multidisciplinary Perspective*, 9/e. Nancy R. Hooyman. H. Asuman Kiyak. Copyright © 2011 by Pearson Education. Published by Allyn & Bacon. All rights reserved.

number of older people who have long-term health problems. But the number of health professionals trained in geriatrics is currently inadequate to meet growing needs.

Gerontologists view aging in terms of four distinct processes that are examined throughout this book:

- *Chronological aging* is the definition of aging based on a person's years lived from birth. Thus, a 75-year-old is chronologically older than a 45-year-old. Chronological age is not necessarily related to a person's biological, physical, psychological, or social age, as we will emphasize throughout this book. For example, we may remark that someone "looks younger (or older)" or "acts younger (or older)" than her or his age. This implies that the individual's *biological* or *psychological* or *social age* is incongruent with the person's *chronological age*.

- *Biological aging* refers to the physical changes that reduce the efficiency of organ systems, such as the lungs, heart, and circulatory system. This type of aging can be determined by measuring the efficiency and functional abilities of an individual's organ systems, as well as physical activity levels. Indeed, some have referred to this as *functional aging* (Hayflick, 1996).

- *Psychological aging* includes the changes that occur in sensory and perceptual processes, cognitive abilities (e.g., memory, learning, and intelligence), adaptive capacity, and personality. Thus, an individual in her 70s who is intellectually active and adapts well to new situations can be considered psychologically young.

- *Social aging* refers to an individual's changing roles and relationships with family, friends, and other informal supports, both paid and unpaid productive roles, and within organizations such as religious and political groups.

Social gerontologists study the impact of these aging processes on both older people and social structures. They also examine effects of

#### AN OLDER ADULT WITH DIVERGENT CHRONOLOGICAL, BIOLOGICAL, PSYCHOLOGICAL, AND SOCIAL AGES

Mr. Roberts is an 80-year-old retired university professor in biology. He has no chronic diseases and continues his longtime exercise routine: running five miles three times a week and weight lifting for core body strength four times a week. His physician tells him that his vital signs resemble that of a 40-year-old. Mr. Roberts has decided to keep his mind active by learning a new language and taking piano lessons, so he spends six hours per week in a college class on Spanish, two hours taking piano lessons, and many hours each day practicing both. His social life is rich with friends of all ages; he and his wife socialize with old and new friends at least twice a week, and he volunteers at the local food bank two mornings per week as a way to serve his community.

social attitudes toward aging on older adults and opportunities available to them. For example, as a society, we have tended to undervalue older people and to assume that most of them are forgetful, unemployable, nonproductive, uninterested in interacting with younger people, and asexual. As a result, they have been limited in their access to activities such as jobs in high-tech fields or stigmatized in long-term care facilities if they express their needs for intimacy or sexuality. The research reviewed throughout this book demonstrates that these stereotypes are not true for the vast majority of older adults who continue to participate actively in society.

With the rapid growth in the number and diversity of older persons, societal myths and stereotypes are increasingly being challenged. The public has become more aware of older citizens' strengths, contributions to society, and potential for civic engagement. Accordingly, older people's status and the way they are viewed by other segments of the population are changing. Contemporary advertising, for example, reflects the shifting status of older people from a group

that is viewed as weak, ill, and poor to one perceived as politically and economically powerful and therefore a growing consumer market.

The emergence of age-based advocacy groups and increased political activity of older adults in the past 50 years have changed not only public perceptions but also policies and programs. Organized groups of older people have responded to congressional attempts to change retirement and pension policies, housing options, health and long-term care policy, Social Security reform—although they do not speak with a unified voice on all issues and their organizing may not be proactive but in reaction to changes in policies and programs. With scarce public resources and the economic crisis, the need for cross-generational collaboration is gradually replacing age-based advocacy.

Equally significant in this area of study are the social, economic, and health problems that continue to affect a large percentage of older people. Even though older adults today are financially better off than they were 50 years ago, slightly less than 10 percent still fall below the U.S. government's official poverty line. In the economic crisis that emerged in 2008, most older adults lost significant retirement income because of declining returns on their investments. This may result in increased rates of poverty among aging adults in future years. Poverty is an even greater problem for women, elders of color, those living alone, and the oldest of the old. Although less than five percent of the older population resides in nursing homes at any given time, the number who will require long-term care at some point in their lives is increasing. Growing percentages of older people in the community face living increased years with chronic diseases that may limit their daily activities. At the same time, health and long-term care costs have escalated. In general, older people pay a higher proportion of their income for health and long-term care than they have at any time in the past, and they often lack access to publicly supported home- and community-based services. Therefore, many gerontologists

are also concerned with developing public policy, program and practice interventions to address these problems.

## Social Gerontology

---

The purpose of this chapter is to introduce you to *social gerontology*. This term was first used by Clark Tibbitts in 1954 to describe the area of gerontology that is concerned with the impact of social and sociocultural conditions on the process of aging and its social consequences. This field has grown as the extent to which aging differs across cultures, historically underserved groups, and societies has been recognized.

Social gerontologists are interested in how the older population and the diversity of aging experiences both affect and are affected by the social structure. As noted above, the fact that older people are now the fastest-growing population segment in the United States has far-reaching social implications for families and communities, health and long-term care, the workplace, retirement practices, long-term care facilities, housing design, and patterns of government and private spending. Already it has led to the growth of specialized services such as assisted living and adult day-health programs, and a leisure and travel industry aimed at the older population. Changes in the sociopolitical structure, in turn, affect civic engagement initiatives. For example, the greater availability of secondary and higher education and health promotion programs offers hope that future generations of older people will be better educated, healthier, economically more secure and socially engaged than the current cohort, presuming a growing economy in the future.

## What Is Aging?

---

Contrary to the messages on birthday cards, aging does not start at age 40 or 65. Even though we are less conscious of age-related changes in earlier life stages, we are all aging from the moment of

birth. In fact, **aging** in general refers to changes that take place in the organism throughout the life span—good, bad, and neutral. Younger stages are referred to as *development* or *maturation*, because the individual develops and matures, both socially and physically, from birth through adolescence. After age 30, additional changes occur that reflect normal declines in all organ systems. This is called **senescence**. Senescence happens gradually throughout the body, ultimately reducing the viability of different bodily systems and increasing their vulnerability to disease. This is the final stage in the development of an organism.

Our place in the social structure also changes throughout our lives. Every society is *age-graded*; that is, it assigns different roles, expectations, opportunities, status, and constraints to people of different ages. For example, there are common societal expectations about the appropriate age to attend school, begin work, have children, and retire—even though people may deviate from these expectations and some of these expectations are now changing as people live longer. To call someone a *toddler*, *child*, *young adult*, or an *old person* is to imply a full range of social characteristics. As we age, we pass through a sequence of defined stages, each with its own social norms and characteristics. In sum, age is a social construct with social meanings and implications.

The specific effects of age grading, or age stratification, vary across cultures and historical time periods. A third-world society, for instance, has very different expectations associated with stages of childhood, adolescence, and old age from mainstream American society. Even within our society, those who are old today have different experiences of aging than previous or future groups of older people; and expectations about when to go to school, shift careers, or start a family are changing dramatically. The term **cohort** is used to describe groups of people who were born at approximately the same time and therefore share many common experiences. For example, cohorts now in their late 80s experienced the Great Depression, World War II, and the Korean War, which shaped their lives. For example, members of the Depression era cohort have tended to be frugal throughout their lives. The oldest-old includes large numbers of immigrants who came to the United States in the first third of the twentieth century and many who have grown up in rural areas. Their average levels of education are lower than those of later cohorts, such as those growing up during the Vietnam War. Such factors set today's oldest-old population apart from other cohorts and must be taken into account in any studies of the aging process as well as policies and practice.

**POINTS TO PONDER**

For each age group below, list one activity or event that you think is typical for that age. These might include marriage, attending school, or learning to ride a bike. Then think of an activity or event that is not so typical.

**TYPICAL    ATYPICAL**

*Toddler (ages 2–4)*

*Child (ages 4–12)*

*Young adult (ages 18–24)*

*Old person (age 65+)*

**The Older Population Is Diverse**

Throughout this chapter, we refer to the phenomenon of aging and the population of older people. As noted earlier in this chapter, these terms are based to some extent on chronological criteria, but, more importantly, on individual differences in functional age, such as the ability to perform activities of daily living. In fact, each of us may differ in the way we define old age. You may know an 80-year-old who seems youthful and a 50-year-old whom you consider old. Older people also define themselves differently. Some individuals, even in their 80s, do not want to associate with “those old people,” whereas others readily join age-based organizations and are proud of the years they have

lived. There are significant differences among the “young-old” (ages 65–74), the “old-old” (ages 75–84), and the “oldest-old” (ages 85 and over) (Riley & Riley, 1986). In addition, intragenerational diversity in terms of gender, race, and sexual orientation exists even within these divisions.

Older people vary greatly in their health status, productive activities, and family and social situations. Growing numbers are employed full- or part-time; most are retired. Most are relatively healthy; some are frail, confused, or homebound. Most still live in a house or apartment; a small percentage is in nursing homes, and growing numbers are in assisted living facilities and adult family homes. Some receive comfortable incomes from pensions and investments, although these have declined in the worldwide economic downturn that started in 2008; many depend primarily on Social Security and have little discretionary income. Most men over age 65 are married, whereas women are more likely to become widowed and live alone as they age. For all these reasons, we cannot consider the social aspects of aging without also assessing the impact of individual variables such as physiological changes, health status, psychological well-being, social class, gender, sexual orientation, and race. Recognizing this, many chapters of *Social Gerontology* focus on how these multiple factors intersect and influence elders’ social functioning and current concepts of active aging, resilience, and productivity.

Although the terms *elders*, *elderly*, and *older persons* are often used to mean those over 65 years in chronological age, this chapter is based on the principle that aging is a complex process that involves many different biological, psychological and social factors and is unique to each individual.

#### POINTS TO PONDER

Discuss with friends and family some common terms used to describe older adults, such as “elderly,” “old folks,” and “elders.” What images of aging and older people do these terms convey?

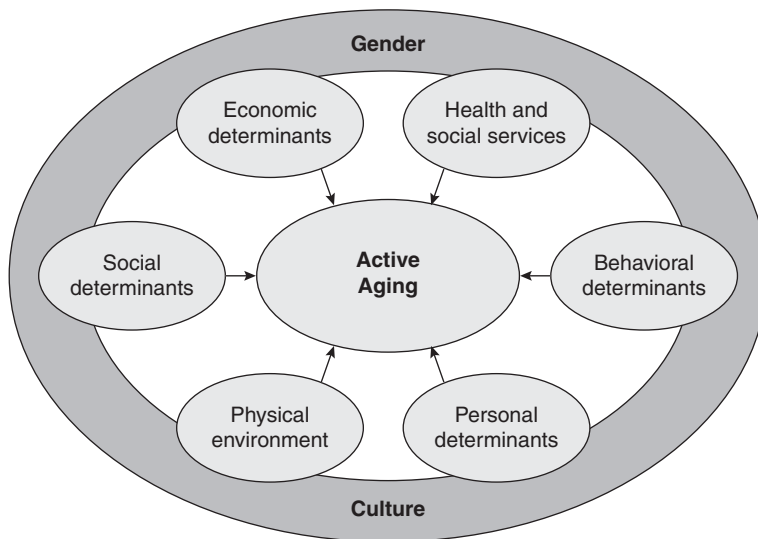
Rather than chronological age, the more important distinction is functional ability—that is, the ability to perform activities of daily living that require cognitive and physical well-being. In addition, the authors deliberately use the term *older adults*, *older people*, *elders*, or *people as they age* throughout the book. The reasons for this choice of more neutral terminology are:

1. There is no comparable term for “the elderly” among younger populations, while “older adults” or “older people” are similar to the concept of “young people.”
2. Growing numbers of older adults do not like the term “seniors” or “elderly.”
3. The word “elder” connotes respect in many cultures (Kaiser, 2006; Lesnoff-Caravaglia, 2002; Levy, 2001; Palmore, 2000).

### An Active Aging Framework

The concept of **active aging** is a widely accepted perspective in gerontology. It is defined by the World Health Organization as “the process of optimizing opportunities for health, participation, and security in order to enhance quality of life as people age” (WHO, 2002, p. 2). This concept focuses on ways to improve quality of life for all older people, including those who are frail, disabled, or require assistance with daily activities. Active aging is consistent with the growing emphasis on autonomy and choice in aging, regardless of physical and mental decline, and benefits both the individual and society. Such a definition shifts our thinking about old age from a time of passivity to one of continued participation in the family, community, workplace, and religious and political life. It serves as a useful framework, since we present a growing number of studies that support the importance of active aging for physical, psychological, and social well-being in the later years.

The active-aging perspective implies that aging is a lifelong process. As a result,



**FIGURE 1 The Determinants of Active Aging**

SOURCE: World Health Organization, *Active ageing: A policy framework* (WHO: 2002). Reprinted by permission of the World Health Organization.

it is understood that people's lifestyles, socioeconomic status, health care, and educational and social activities in their childhood, youth, and middle years determine the quality of their lives in their later years. This is also an important assumption of other models of active aging, including the concepts of *successful, positive, vital, resilient, robust, and productive aging*. Accordingly, the determinants of active aging, as shown in Figure 1, include individual behaviors, personal characteristics, the physical environment (e.g., neighborhood, living situation) and social environment (e.g., informal and formal support networks), economic security, and access to and use of health and social services across the life course. This model also places great importance on status variables such as ethnicity, race, gender, and sexual orientation that influence opportunities for active aging, such as access to education, employment, and health care beginning from childhood. A closely related concept is **resilience**, or individuals' ability to thrive despite adversity in their lives. We have all known older adults who have suffered multiple losses throughout their lives but have turned those losses into opportunities for forgiveness and growth, in part because of the protective effects of family, community, and cultural and religious affiliation.

As noted above, the concept of **life course** is central to this model. A life course approach captures how earlier life experiences and decisions affect opportunities in later life and for future generations within and across cultures and time. By placing families and individuals in the larger context of historical, demographic, economic, and social changes, the life course perspective differs from a life-span approach that is focused on individual development. A life course perspective recognizes that gender or racial inequities that limit opportunities earlier in the life cycle are often intensified in old age, frequently resulting in increased economic and health disparities and cumulative inequities for older women and persons of color. Gender, ethnicity, race, sexual orientation, childhood poverty, educational levels, and generational differences have all been identified as associated with health disparities and as social justice issues for elders (Alwin & Wray, 2005; O'Rand & Hamill-Luker, 2005; Whitfield & Hayward, 2003; Williams, 2005). At the same time, however, many older adults, including those from historically underserved groups, have demonstrated remarkable resilience and strengths, making the most of lifelong experiences despite adversity and setbacks throughout their lives (Cohen, 2005).

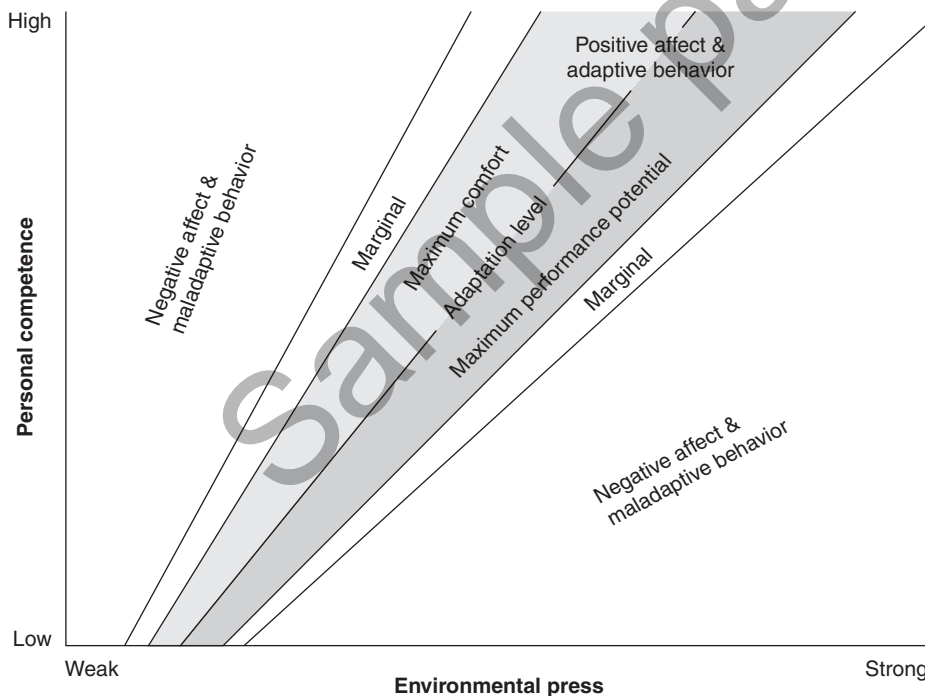
## A Person–Environment Perspective on Social Gerontology

Consistent with the framework of the interaction of physiological, psychological, and social changes with aging, this chapter approaches topics in social gerontology from a **person–environment perspective**. This model suggests that the environment is not a static backdrop, but changes continually as the older person takes from it what he or she needs, controls what can be

modified, and adapts to conditions that cannot be changed. Adaptation thus implies a dual process in which the individual adjusts to some characteristics of the social and physical environment (e.g., completing the numerous forms required by Medicare) and brings about changes in others (e.g., lobbying to expand Medicare benefits to cover prescription drugs).

### Environmental Press

The **competence model** is one useful way to view the dynamic interactions between the person's physical and psychological characteristics and the social and physical environment (Lawton & Nahemow, 1973; Lawton, 1989; Parmelee & Lawton, 1990). *Environment* in this model, which is shown in Figure 2, may



**FIGURE 2** Diagrammatic Representation of the Behavioral and Affective Outcomes of Person–Environment Transactions

SOURCE: M. P. Lawton and L. Nahemow, Ecology and the aging process. In C. Eisdorfer and M. P. Lawton (Eds.), *Psychology of adult development and aging* (Washington, D.C.: American Psychological Association, 1973), p. 661. Copyright © 1973 by the American Psychological Association. Reprinted by permission of the author and publisher.



refer to the larger society, the community, the neighborhood, or the home. **Environmental press** is defined as the demands that social and physical environments make on the individual to adapt, respond, or change. The environmental-press model can be approached from a variety of disciplinary perspectives. A concept fundamental to social work, for example, is that of human behavior and the environment, and the need to develop practice and policy interventions that achieve a better fit between the person and his or her social environment. Health care providers are increasingly aware of the necessity to take account of social and physical environmental factors (e.g., family caregivers and other informal supports as well as the elder's living situation) in their assessments of health problems.

Architects and advocates for persons with disabilities are developing ways to make physical environments more accessible and congruent. Psychologists are interested in how physical and social environments may be modified to maximize the older person's ability to learn new tasks and perform familiar ones such as driving, taking tests, and self-care. Sociologists study the ways in which the macroenvironment (the larger political and economic structures and policies) affects and is affected by an individual's interactions with it. The concepts of this model are basic to understanding the position of older people and to developing ways to improve the quality of their lives.

Environmental press can range from minimal to quite high. For example, often very little environmental press is present in an institutional setting where an individual is not responsible for self-care (such as personal grooming and housekeeping) and may have few resources to stimulate the senses or challenge the mind. Other environments can create a great deal of press—for example, a multigenerational household in which an older person plays a pivotal

role. An increase in the number of people sharing the living arrangement or a move to a new home intensifies the environmental demands. As the demands change, individuals must adapt in order to maintain their sense of competence.

Individuals perform at their maximum level when the environmental press slightly exceeds the level at which they adapt. In other words, the environment challenges them to test their limits but does not overwhelm them. If the level of environmental demand becomes too high, the individual experiences excessive stress or overload. When the environmental press is far below the individual's adaptation level, sensory deprivation, boredom, learned helplessness, and dependence on others may result. However, a situation of mild to moderate stress, just below the person's adaptation level, results in maximum comfort. It is important to challenge the individual in this situation as well to prevent a decline to boredom and inadequate stimulation. In either situation—too much or too little environmental press—the person or the environment must change if the individual's adaptive capacity is to be restored and quality of life enhanced.

As implied above, *individual competence* is another concept central to this model. This is defined by Lawton and Nahemow (1973) as the theoretical upper limit of an individual's abilities to function in different areas. Some of the capacities needed to adapt to environmental press include good health, effective problem-solving and learning skills, and the ability to manage the basic activities of daily living such as dressing, grooming, and cooking (Parmelee & Lawton, 1990). As suggested by the model in Figure 2, the higher a person's competence, the higher the levels of environmental press that can be tolerated. Thus, an older person with multiple physical disabilities and chronic illnesses has reduced physical competence, which may limit the level of physical demands with which he or she can cope.

**COPING WITH P-E INCONGRUENCE**

Sometimes P-E incongruence can be temporary, as in the following example of an elder who must adjust to life in a new community:

Mrs. Jackson recently moved to Minneapolis from her home in Atlanta in order to be near her only daughter, although she does not know anyone else in the new community. Her daughter has found a beautiful high-rise apartment for seniors so Mrs. Jackson can live among other retired older adults. Although the building is new and has many safety features to help elders live independently, Mrs. Jackson feels overwhelmed by all the built-in monitoring systems and appliances that seem to be controlling her life, and she does not like being on the 10th floor looking down on the street after a lifetime of living in a one-story home surrounded by her lovely flower garden in Atlanta. She has not met anyone in the building from her part of the country or with a similar work and family history to hers, so she keeps mostly to herself. Going out on her own and exploring the city is out of the question because it is too cold for her to walk outdoors or to go window-shopping, and she does not feel safe in a new city.

On the other hand, this individual may still maintain a high level of psychosocial competence, enjoy the company of others, and experience life satisfaction.

**Environmental Interventions**

The competence model has numerous implications for designing prevention and intervention strategies to enhance the quality of older adults' lives. Most services for older people are oriented toward minimizing environmental demands and increasing supports. These services may focus on changing the physical or the social environment, or both. Physical environmental modifications (such as ramps and handrails) and community services (such as Meals On Wheels and escort vans equipped for

wheelchairs) reestablish the older person's level of adaptation and ease the burdens of daily coping. Such arrangements are essential to the well-being of some older people who require environmental adaptations or occasional assistance from informal and paid caregivers to enhance their autonomy. For example, many older people with chronic conditions are able to remain in their own homes because of environmental modifications such as emergency systems that allow them to call for help, computers that aid them with communication, and medication reminders.

A fine line exists, however, between minimizing excessive environmental press and creating an environment that is not stimulating or is "too easy" to navigate. Well-intentioned families, for example, may do too much for an older person, assuming responsibility for daily activities so that their older relative no longer has to exert any effort and may no longer feel he or she is a contributing family member. Likewise, nursing home staff may not challenge residents to perform such daily tasks as getting out of bed or going to the dining hall. Protective efforts such as these can remove necessary levels of environmental press, with the result that the person's social, psychological, and physical levels of functioning may decline. Understimulating conditions, then, can be as negative in their effects on older people as those in which there is excessive environmental press.

## Why Study Aging?

---

As you begin this chapter, you may find it useful to think about your own motivations for learning about older adults and the aging process. You may be in a required course, questioning its relevance, and approaching this chapter as something you must read to satisfy requirements. Or you may have personal reasons for wishing to learn about aging. You may be concerned about your own age-related changes, wondering whether reduced energy or alterations in physical features are inevitable with age. After all, because middle and old age together encompass a longer time span than any other stage of our lives, it is important that we understand and prepare for these years. Perhaps you are in a transition phase, looking forward to the freedom made possible by retirement and the “empty nest.” Through increased knowledge about the aging process, you may be hoping to make decisions that can enhance your own active aging. Or perhaps you

Sample pages

are assisting aging relatives, friends, and neighbors, wanting to know what can be done to help them maintain their autonomy, their housing options, and how you can improve your own caregiving abilities.

Learning about aging not only gives us insight into our own interpersonal relationships, self-esteem, competence, and meaningful activities as we grow older; it also helps us comprehend the aging process of our parents, grandparents, clients, patients, and friends. It is important to recognize that change and growth take place throughout the life course and that the concerns of older people are not distinct from those of the young, but represent a continuation of earlier life periods. Such understanding can improve our effectiveness in communicating with relatives, friends, or professionals. In addition, such knowledge can help challenge any assumptions or stereotypes we may hold about behavior appropriate to various ages.

Perhaps you wish to work professionally with older people but are unsure how your interests can fit in with the needs of the older population. The exciting and diverse range of career opportunities in both community and institutional settings and growing geriatric workforce needs are discussed throughout this chapter. If you are already working with older people, you may genuinely enjoy your work, but you may also be concerned about the social, economic, and health problems facing some older adults and thus feel a responsibility to change these negative social conditions. As a professional or future professional working with older people, you are probably eager to learn more about both policy and practice issues that can enhance their active aging, resilience, and quality of life.

Regardless of your motivations for reading this text, chances are that, like most Americans, you have some misconceptions about older people and the aging process. As products of our youth-oriented society, we all sense the pervasiveness of negative attitudes about aging, although our own personal experiences with older people may counter many stereotypes and myths. By

studying aging and older people, you will not only become more aware of the older population's competence and contributions in many areas, but also be able to differentiate the normal changes that are associated with the aging process from disease-related modifications. Such an understanding may serve to reduce some of your own fears about aging, as well as positively affect your professional and personal interactions with older people.

Our challenge as educators and authors is to present you with the facts and concepts that will give you an accurate picture of the experience of aging. We also want to convey to you the excitement and importance of learning about the field of social gerontology. We hope that you will acquire information that strengthens positive attitudes toward living and working with older people and toward your own experience of aging. First, we will describe some career opportunities in this field, whether you want to specialize in work with older adults and their families or you choose a career that includes older adults as patients, service recipients, or a population that benefits from your expertise. Later, we will turn to the demographic changes that are creating the largest population of people age 65 and older in the history of the United States.

### **Careers in Aging**

Those who work in the field of aging may be *geriatricians*, *gerontological workers*, *gerontological specialists*, or *gerontologists*. The term *geriatrics* typically refers to the work of health professionals in the branch of medical science that deals with diseases, other health problems, and health promotion and prevention specific to older adults. Geriatricians are physicians trained in geriatrics; there are also geriatric social workers, geriatric nurses, geriatric pharmacists, and people in other allied health professions who have received specialized training to work with older people and their families. In fact, the membership of the American Geriatrics Society includes a wide range

of health care providers who are trained to prevent and manage the multiple health concerns of older adults. Gerontology, which is broader than geriatrics, refers to the psychological, social, and biological phenomena associated with aging, as well as policies and programs that address older adults' wide range of needs.

The classifications of gerontological workers, gerontological specialists, and gerontologists are based on their degree of training related to aging. Gerontological workers have no formal training in this field but nevertheless provide services to or for older persons. These people include social workers who work in a child welfare agency interacting with older grandparents, physicians whose patients have aged, nurse aides in a long-term care setting, or home care workers. Gerontological specialists have received training in gerontology through a certificate, continuing education, a minor in college, or a postdoctoral training, but their primary training is in another discipline. For example, physical and occupational therapists, social workers, nurses, and physicians may take additional courses, complete an internship or residency in geriatrics, or obtain a certificate as part of their professional training that allows them to specialize in working with older people. In contrast, gerontology is the primary training at the bachelor's, master's, or doctoral levels for gerontologists. A growing number of colleges and universities today offer degrees in gerontology. As described in this section, most professionals who work for or with older people today fall into the category of gerontological specialists, without a degree in the field but with some training or specialization in gerontology (Grabinski, 2007; Stepp, 2007).

No matter what your area of interest—health care, mental health, design, technology, law, business, or one of many others—there are numerous and growing opportunities to work with or on behalf of older adults and their families. A degree in social work with additional training in gerontology is necessary to become a professional advocate, such as a professional geriatric care manager (PGCM). Those who are interested in designing or adapting housing and products for older

people would do well to combine their degrees in architecture or interior or industrial design with coursework in gerontology. Similarly, experts in computer science, industrial or human factors engineering, and information technology who want to develop, test, and improve technology for older users must first understand the normal physiological, social, and psychological processes of aging and how systemic diseases and cognitive impairment can result in the need for technological aids. Information specialists, librarians, and experts in lifelong learning and continuing education can also benefit from this knowledge as they work with a growing population of older students and clients. Attorneys who practice elder law, estate planning, or file lawsuits in areas such as elder abuse, age or disability discrimination, or advocacy for older clients must understand the normal aging process and the impact of disease and dementia on their clients. Even those who decide to obtain a degree in business and work in the fields of accounting, marketing, advertising, banking, or financial planning should obtain some training in gerontology through additional coursework, certificates in aging, or continuing education courses. Such knowledge is vital for helping younger adults plan for their old age and for assisting older persons in maintaining quality of life. For those seeking to develop or influence policies affecting older adults, advocacy at the individual or population level requires extensive knowledge of age-associated needs, the aging process, and health and social policies affecting state and local programs for older citizens. A degree in public administration, law, or social work, combined with training in gerontology, can prepare individuals to work as advocates for the rights of older persons. As noted by Dr. Marie Bernard, Director of the National Institute on Aging, "You can do virtually anything . . . The doors are wide open. There are so many things you can do in this field." (American Geriatrics Society, 2009).

The growing population of older adults and their family caregivers will require more health care providers with the knowledge, values, and skills to manage their needs in community and

long-term care settings. It has been estimated that by 2030, 3.5 million formal health care providers—a 35 percent increase from current levels—will be needed just to maintain the current ratio of providers to the total population. Similarly, all health care providers are predicted to spend at least 50 percent of their time working with older adults. This means that health care professionals in medicine, nursing, pharmacy, dentistry, and social work must enhance their competence in geriatric health care (IOM, 2008). Additionally, one of the fastest-growing occupational areas is direct care, including such workers as nurse aides, home health aides, and personal care aides with skills to work with older adults. Other health professionals trained in gerontology and geriatrics will be needed, especially those who focus on prevention and rehabilitation. These include physician assistants; nutritionists; recreational, physical, occupational, and speech therapists; as well as audiologists. Due to these needs, the Eldercare Workforce Alliance, a national coalition, addresses the immediate and future workforce crisis in caring for an aging America.

## Growth of the Older Population

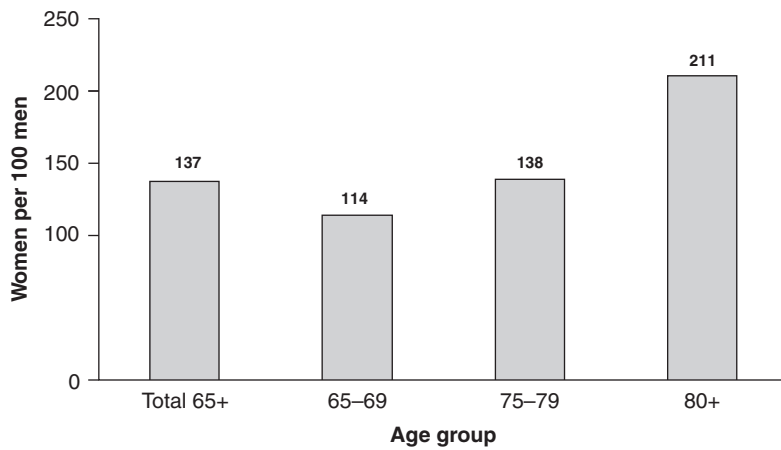
The increasing size of the older population is the single most important factor affecting current interest in the field of gerontology. In 1900, people age 65 and older accounted for approximately 4 percent of the U.S. population—less than 1 in 25. By 2008, slightly more than 100 years later, this segment of our population had grown to almost 39 million, or 12.7 percent of the U.S. population (AOA, 2008; U.S. Census Bureau, 2009b). This represents a twelve-fold increase in the older population during this period, compared with a three-fold increase in those under age 65. Population growth for the older age group declined slightly between 1990 and 2005 because of the low birthrates experienced during the Great Depression (1929–1935). With the first baby boomers turning 60 in 2006, the population over 65 will again increase significantly after 2010. Thus, demographers

predict that by 2030 the population age 65 and older may be as high as 72 million, representing a 100 percent increase over 30 years, compared with a 30 percent growth in the overall population (U.S. Census Bureau, 2009b).

## Changes in Life Expectancy

Why have these changes in the older population occurred? Chiefly because people are living longer. In 1900, the average **life expectancy** at birth in the U.S. (i.e., the average length of time one could expect to live if one were born that year) was 47 years. At that time, approximately 772,000 people were between the ages of 75 and 84 in the United States, and only 123,000 age 85 and older. In 2008, there were over 5.4 million in the oldest group. The average life expectancy is now much longer: 78.1 years. About four out of five individuals can currently expect to reach age 65, at which point there is a better than 50 percent chance of living past age 80 (AOA, 2008; U.S. Census Bureau, 2009a, 2009b).

According to the Census Bureau, life expectancy at birth is expected to increase to 82.6 in 2050. Sex differences in life expectancy have declined since 1980, when females born that year could expect to live 7.4 years longer than men; in 2006, the difference was only 5.3 years. Projections by the Census Bureau assume a fairly constant 5- to 6-year difference in male-female life expectancy well into the future. Therefore, females born in 2006 are expected to reach age 80.7, compared to 75.4 for males in that birth cohort (U.S. Census Bureau, 2009a). Differences continue to be greater between African American females and males, with current life expectancies at birth of 76.9 and 70, respectively. Even in the year 2050, however, male life expectancy will be less than 80 years, compared to 84.3 years for women (NCHS, 2007; AOA, 2008). Of course, these projections do not take into account natural disasters or potential new diseases that could differentially increase mortality risks for men and women. On the other hand, death rates due to hypertension and stroke have already started to decline because



**FIGURE 3** Number of Women per 100 Men by Age: 2007

SOURCE: U.S. Census Bureau, 2009.

of lifestyle changes. Since both health conditions are somewhat more likely to affect men, the decline may narrow the gender differential and increase life expectancy more for men. Nevertheless, the trend illustrated in Figure 3, where women outnumber men at every age after 65, will continue at least until mid-century.

Most gains in life expectancy have occurred in the younger ages. For example, during the period from 1900 to 2007, the average life expectancy at birth increased from 47 years to 78.1 years. Although less dramatic, gains in life expectancy beyond age 65 also occurred during this same period, from about 12.3 to 18.7 years (20.3 years for women, 17.4 for men) (AOA, 2008). The gains that took place in the early years of life are largely attributable to the eradication in the twentieth century of many diseases that caused high infant and childhood mortality. On the other hand, survival beyond age 65 may increase significantly in future cohorts, when heart disease and cancer become less fatal but more chronic or long-term diseases, along with obesity, predominate. Already there has been an acceleration of years gained. Between 1900 and 1960, only 2.4 years were gained beyond age 65, while the gain since 1960 has been 4.3 years (Federal Interagency Forum, 2008).

This shift results mostly from advances in medicine. A hundred years ago, adults generally died from acute diseases, particularly influenza

and pneumonia. Few people survived these diseases long enough to need care for chronic or long-term conditions. Today, death from acute diseases is rare. Maternal, infant, and early childhood death rates have also declined considerably. The result is a growing number of people who survive to old age, often with one or more health problems requiring long-term care. Nevertheless, life expectancy at age 65 is lower in the U.S. than in Japan, Switzerland, and Canada. In particular, Japanese men can expect to live 1.2 years longer than American men, and Japanese women 3.2 years longer than American women at age 65 (Federal Interagency Forum, 2008).



Today more former presidents are alive than in the past. Saul Loeb/AFP/Getty Images

## Maximum Life Span

It is important to distinguish life expectancy from **maximum life span**. While life expectancy is a probability estimate based on environmental conditions such as disease and health care, as described previously, maximum life span is the maximum number of years a given species could expect to live if environmental hazards were eliminated. There appears to be a maximum biologically determined life span for cells that comprise the organism, so that even with the elimination of all diseases, we could not expect to live much beyond 120 years. For these reasons, more persons will expect to live longer, but the maximum number of years they can expect to live will not be increased in the foreseeable future unless, of course, some extraordinary and unanticipated biological discoveries occur. The longest documented human life was of Jeanne Calment, a Frenchwoman who died at age 122.

Perhaps the most important goal of health planners and practitioners should be to approach a *rectangular survival curve*; that is, the “ideal curve.” As seen in the survival curve in Figure 4, developments in medicine, public hygiene, and health care have already increased the probability that people will survive into the later years. The ideal situation is one where all people would survive to the maximum life span, creating a rectangular curve. The survival curves of developed countries serve as a model for developing countries; that is, about 50 percent of all babies born today in developed countries will reach age 85, or more than two-thirds of the maximum life span of 120 years (CDC, 2005). Although the U.S. is approaching this ideal curve, it will not be achieved until the diseases of middle age—including cancer, heart disease, diabetes, and kidney diseases, along with obesity—can be totally prevented or at least effectively managed as chronic conditions.

The oldest-old are disproportionately represented in institutional settings such as nursing homes, assisted living, adult family homes, and

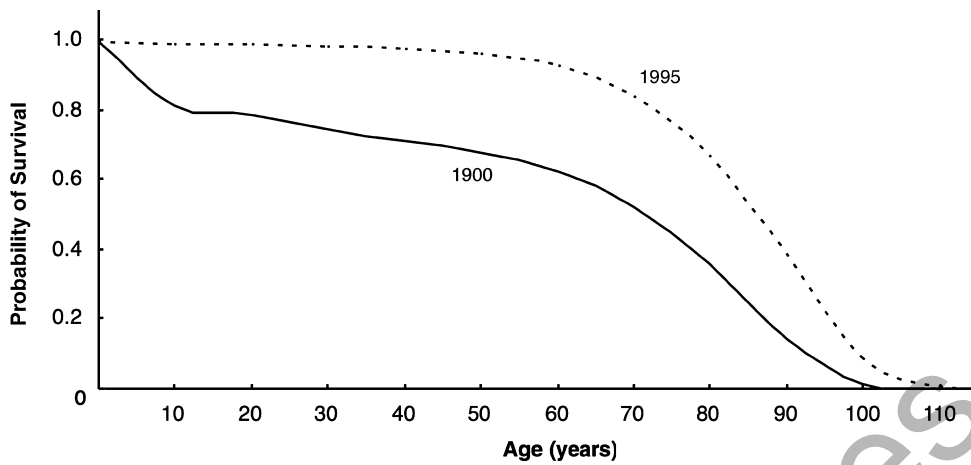
### GENETIC OR BEHAVIORAL EXPLANATIONS OF LONGEVITY

Journalist Dan Buettner has traveled to world regions where it is not unusual to find vigorous, active centenarians. He labeled these “Blue Zones,” places with large numbers of long-living residents who share in common healthy lifestyles, diets, engagement in their community, and a positive world view (Buettner, 2008). Yet these elders in different parts of the world—Okinawa, Sardinia, the northwestern region of Costa Rica, and Loma Linda, California—share other characteristics that cannot be replicated by others who want to emulate their lifestyles in efforts to increase their longevity. The residents of these Blue Zones share genetic qualities and cultural norms that have tied the community together for hundreds of years, and they live in more remote, less stressful environments than the majority of elders. While some aspects of their lifestyles may be adopted—such as strong connections with family and friends, participating in physical labor into advanced old age, walking and exercise, a low-calorie, plant-based diet, and a positive outlook—several societal and genetic factors cannot be replicated.

### WHO ARE THE OLDEST-OLD?

- Not surprisingly, the great majority are women (71 percent).
- Their educational level is lower than for those age 65 to 74 (8.6 years vs. 12.1 in 1990).
- Most women are widowed compared to men (78.3 percent vs. 34.6 percent).
- Their mean personal income is lower than for the young-old cohorts.
- A higher proportion live below or near poverty compared to their counterparts age 65 to 69 years) (<http://SSA.gov/policy/pubs>, 2000).
- The current cohort of the oldest-old includes 15 percent who are foreign born. Many immigrated from European countries in the early 1900s, while others are later immigrants from China, Japan, the Philippines, Vietnam, and Latin America. The typical challenges of aging may be exacerbated for these nonnative English speakers as they try to communicate with health care providers. Misdiagnoses of physical, psychological, and cognitive disorders may occur in such cases.



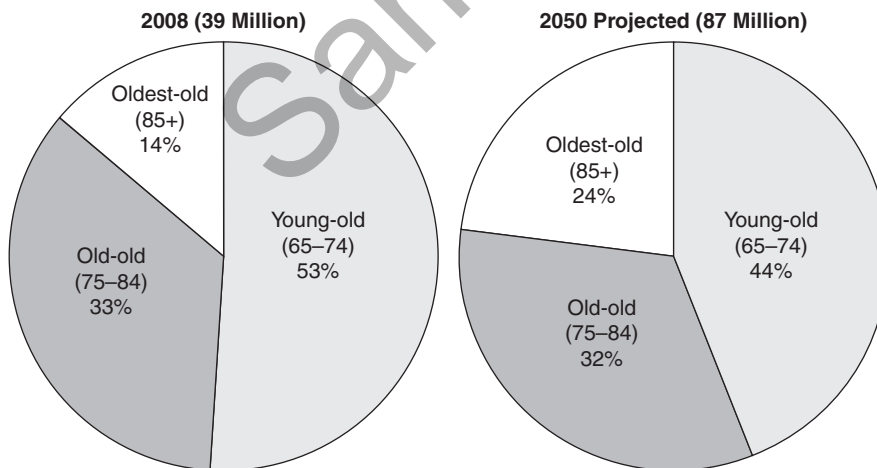


**FIGURE 4 Increasing Rectangularization of the Survival Curve**

SOURCE: J. R. Wilmoth and S. Horiuchi, Rectangularization Revisited: Variability of Age at Death within Human Populations. *Demography*, Vol. 36, No. 4 (Nov., 1999), pp. 475-495.

hospitals, because they are more likely to have multiple health problems that often result in physical frailty, and up to 50 percent may have some form of cognitive impairment. Among the 1.2 million elders in nursing homes, about 50 percent are age 85 and older. However, the incidence of relocation to a long-term care facility among historically disadvantaged populations is lower. For example, the rate for African

Americans age 85 and older is only about two-thirds the overall rate for this age group. The oldest-old blacks are far more likely to be living with relatives other than a spouse or partner (40 percent). Only 27 percent of the oldest-old (regardless of their race or ethnicity) live with a spouse or partner, compared with 63 percent of people age 65 to 74 (AOA, 2008; U.S. Census Bureau, 2005). Although functional health is



**FIGURE 5 Percentage of Older Americans by Age Group**

SOURCE: U.S. Census Bureau, 2008, U.S. Administration on Aging, 2008.

more impaired in the oldest-old, a study of Medicare expenditures during the last year of life showed that medical costs were not highest for this age group. Contrary to common misperceptions, Medicare expenditures during the last year of life for people age 85 and older were 60 to 70 percent lower than the average charges for the group who died at ages 65 to 74, regardless of gender and race. These findings reflect the shorter hospitalizations and less aggressive terminal health care received by the oldest-old (Hoover et al., 2002; Levinsky et al., 2001). These costs may be even lower for future cohorts of the oldest-old, who are likely to be healthier and more active than today's population.

## The Oldest-Old

### Ages 85 and Older

The population age 85 and older, also referred to as the "oldest-old," has grown more rapidly than any other age group. In 2008, of the nearly 39 million persons age 65 and over in the U.S.:

- Thirteen million, or 33 percent, were age 75 to 84.
- Another 5.4 million, or 14 percent, were age 85 and older (Federal Interagency Forum, 2008; U.S. Census Bureau, 2008a).
- The oldest-old population of Americans has increased by a factor of 23.
- The old-old (ages 75–84) have increased twelve-fold.
- The young-old (ages 65–74) grew eightfold.

It is also important to consider the distribution of selected age groups now and in the future. The young-old (ages 65–74) currently represent 53 percent of the older population; those over 85 make up 14 percent. Those over age 85 increased by more than 500 percent from 1960 to 2007. As Table 1 illustrates, between 1990 and 2007, the oldest-old population increased more than

**TABLE 1 Population Increase per Age Group: United States (in millions)**

YEAR	AGE		
	15–44	65+	85+
1960		16.6	0.9
1990	118	31.1	3.02
2007	126.3	37.9	5.3
Increase (%) (1990–2007)	7%	21.9%	75%

SOURCE: U.S. Census Bureau, 2007.

10 times the growth of 15- to 44-year-olds and more than three times that of the total population aged 65 and older. This does not mean that their absolute numbers are higher than the younger groups in Table 1 but that their rate of growth is much faster. Demographers project this age group to reach 19 million by 2050, almost four times their current number. This translates into 24 percent oldest-old by 2050 (see Figure 5). This is primarily attributable to the aging of baby boomers, who will start to turn 85 after 2030. The baby boom generation, defined as those born between 1946 and 1964, currently numbers 69 million. However, these projections vary, depending on assumptions about changes in chronic disease morbidity and mortality rates (AOA, 2008). The impact of such a surge in the oldest-old on the demand for health services, especially hospitals and long-term care settings, will be dramatic.

### Centenarians

Projections by the U.S. Census Bureau also suggest a substantial increase in the population of centenarians, people age 100 and older. In 2006, more than 73,000 Americans had reached this milestone, almost double their numbers in 1990. Baby boomers are expected to survive to age 100 at rates never before achieved; one in 26 Americans can expect to live to be 100 by 2025, compared with only one in 500 in 2000 (AOA, 2008).



With increases in life expectancy, oldest-old adult children may live with centenarian parents, as in this photo of a 90-year-old daughter enjoying a meal with her 112-year-old mother. David McLain/Aurora Photos

As more Americans become centenarians, there is growing interest in their genetics and lifestyles that may have influenced their longevity. Data from the Georgia Centenarian Study support other findings of greater survival among women, as well as racial crossover effects in advanced old age (i.e., persons of color who live to age 85 are “hardier” than their Caucasian counterparts). In a follow-up of 137 people age 100 at entry into the study, African American women, on average, survived twice as many months as white men, who lived the shortest time beyond 100. White women had the next best survival rates and lived slightly longer than African American men (Poon et al., 2000). Overall, genetics appears to be a primary factor, especially given the predominance of healthy 80-year-old adult children of centenarians, but lifestyle factors, social support, and personality are also salient (Christensen, 2001).

The New England Centenarian Study points to genetic factors that determine how well the older person copes with disease (Perls & Silver, 1999; Perls & Terry, 2003; Perls & Wood, 1996; Terry et al., 2004). This study suggests that the oldest-old are hardy because they have a higher threshold for disease and disability and show slower rates of disease progression than

their peers who develop chronic diseases and disabilities at younger ages and die earlier. Perls and colleagues illustrate this hypothesis with the case of a 103-year-old man who displayed few symptoms of Alzheimer’s disease; however, at autopsy, the man’s brain had a high number of neurofibrillary tangles, which are a hallmark of the disease. Contrary to the once prevalent belief that dementia is a concomitant of advanced age, as many as 30 percent of centenarians have no memory problems, 20 percent have some, and 50 percent have serious problems. In one study of 69 centenarians who were tested for dementia, none of these robust elders showed significant levels of dementia, either in their neuropsychological testing or in the neuropathological studies of their brains (Samuelsson et al., 1997; Silver et al., 1998).

Rates of dementia were slightly higher in the New England Centenarian Study, where 59 percent of women scored in the moderate–severe range, and 17 percent in the normal range. In contrast, only 33 percent of centenarian men scored in the moderate–severe dementia range and 30 percent in the normal range (Terry, Sebastiani, Andersen & Perls, 2008). Even among centenarians with some cognitive impairment at age 100, however, 90 percent had been cognitively intact until well into their 90s. Indeed, other researchers who have studied dementia in older adults have suggested that the genetic mutations most closely associated with Alzheimer’s disease are not present in the oldest-old. Environmental factors that emerge much later in life appear to cause dementia in these survivors (Kaye, 1997).

The likelihood of a genetic advantage is also supported by the finding that male siblings of centenarians are 17 times more likely as the general population, and female siblings eight times more likely, to survive to age 100. As further evidence for the robustness of centenarians, all of the 79 people who were age 100 had lived independently into their early 90s, and on average, took only one medication (Perls et al., 1998; Willcox et al., 2006b).

**CENTENARIANS' ZEST FOR NEW EXPERIENCES**

The obituary of a 103-year-old woman who died of a stroke noted that she celebrated her 100th birthday by taking her first hot-air balloon ride. To her it was no big deal, just something she wanted to do. Her daughter described her as "go, go, go, all the time. She liked to have fun."

SOURCE: (Brown, 2009).

Older men who survive to age 90, in particular, represent the hardiest segment of their birth cohort. Between ages 65 and 89, women score higher on tests of cognitive function. However, after age 90, men perform far better on these tests. Even at age 80, 44 percent of men were found to be robust and independent, compared with 28 percent of women. In an analysis of 523 women and 216 men age 97 and older, researchers in the New England Centenarian Study found that men in this age group had better functional health than their female counterparts. More than three times as many men (60 percent vs. 18 percent of women) scored 90 or higher on the Barthel Activities of Daily Living Index, where a score of 80–100 represents fully independent functioning. Even among the small group of centenarians (32 percent of this sample) who had "late onset" of major chronic diseases (at age 85 or later), twice as many men as women (50 percent vs. 27 percent respectively) had Barthel ADL Index scores of 90 or higher (Terry, et al., 2008).

Chronic disease onset occurs later or not at all among most centenarians. A retrospective analysis of more than 400 persons in the New England Centenarian Study found that 45 percent had none of the ten most common chronic diseases (i.e., diabetes, hypertension, heart disease, chronic obstructive pulmonary disease, osteoporosis, stroke, cancer, Parkinson's disease, thyroid conditions, dementia) until after age 80. Another 13 percent had escaped any of these diseases, and 42 percent were classified as "survivors" because

they had been diagnosed with one or more of these diseases before age 80 but had functioned adequately into their 90s and 100s (Evert, Lawler, Bogan & Perls, 2003).

The Okinawa Centenarian Study supports the importance of both genetic and environmental factors in explaining extreme longevity. Since 1976, researchers have examined more than 600 centenarians in this isolated prefecture of Japan. Most of the elders possess genetic patterns that place them at lower risk of autoimmune diseases, but even those without these patterns have lower rates of coronary heart disease, cancer, and stroke mortality than other Japanese people. They also have lower blood levels of cholesterol, homocysteine, and free radicals. Researchers attribute these biochemical advantages to a low-calorie diet with a high intake of folate, vitamins B6, B12, D, calcium, omega-3 fats, and high-fiber foods. The traditional Okinawan lifestyle includes high physical activity, social integration at all ages, a deep spirituality, adaptability, and optimistic attitudes. In fact, Okinawans who move from the island and abandon their traditional diet and lifestyle experience higher mortality rates from diseases that are rare among lifelong Okinawans (Bernstein et al., 2004; Suzuki, Willcox, & Willcox, 2001; Willcox et al., 2006a, 2006b).

Further evidence for the resilience of centenarians comes from the Swedish Centenarian Study (Samuelsson et al., 1997). Among 143 respondents:

- 52 percent were able to perform their activities of daily living with little or no assistance.
- 39 percent had a disorder of the circulatory system.
- 80 percent had problems with vision and hearing.
- 27 percent had some signs of dementia and all performed worse on a test of cognitive function (memory and attention) than 70- to 80-year-olds.

Overall, centenarians appear to be healthy for a longer period of time. Nevertheless, almost 50 percent live in nursing homes, compared with 16 percent of all persons age 85 and older (AOA, 2008; Griffith, 2004). This may be because about 25 to 30 percent of centenarians no longer have living children or siblings but often rely on nieces, nephews, and longtime friends (Christensen, 2001).

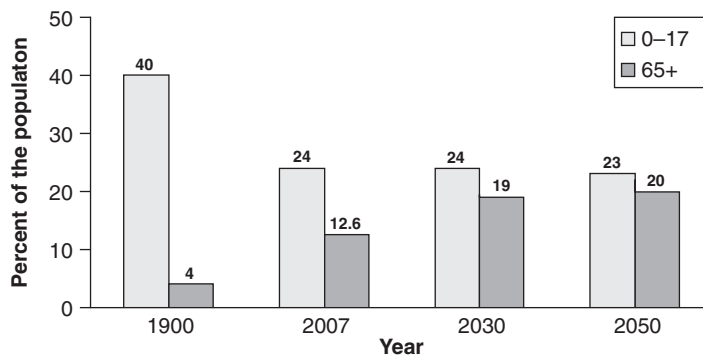
### Population Pyramids

The increase in longevity is partly responsible for an unusually rapid rise in the *median age* of the U.S. population—from 28 in 1970 to 36.8 years in 2009, meaning that half the population was older than 36.8 years and half younger (U.S. Census Bureau, 2009a). From a historical perspective, an 8-year increase in the median age over a 30-year period is a noteworthy demographic event. The other key factors contributing to this rise include a dramatic decline in the birthrate after the mid-1960s, high birthrates from 1890 to 1915 and just after World War II (these baby boomers are now all older than the median), and the large number of immigrants before the 1920s. The median age will rise as more Americans live into their 80s and 90s; to age 39 by 2030 (U.S. Census Bureau, 2009a).

One of the most dramatic examples of the changing age distribution of the American population is the shift in the proportion of older adults in relation to young persons, as illustrated

in Figure 6. In 1900, when 4 percent of the population was age 65 and over, 40 percent was young persons age 0 to 17 years. By 2005, reduced birthrates in the 1970s and 1980s had resulted in a decrease of young persons to 25 percent of the population. The U.S. Census Bureau predicts that, by 2030, the proportion of young and old persons will be similar, with those age 0 to 17 forming 23.5 percent of the population and older adults about 19 percent. After 2030, the death rate will be greater than the birthrate because baby boomers will be in the oldest cohorts (U.S. Census Bureau, 2009b).

The *population pyramid* illustrates the changing proportions of young and old persons in the population. Figure 7 contrasts the population pyramids for the years 2000, 2025, and 2050. Each horizontal bar represents a 10-year *birth cohort* (i.e., people born within the same 10-year period). By comparing these bars, we can determine the relative proportion of each birth cohort. As you can see in the first graph, the distribution of the population in 2000 had already moved from a true pyramid to one with a bulge in the 35- to 54-year-old group; this represents the population of baby boomers. This pyramid grows more column-like over the years, as shown in the other two graphs. These changes reflect the aging of the baby boomers (note the “pig in a python” phenomenon as this group moves up the age ladder), combined with declining birthrates and reduced death rates for older cohorts.



**FIGURE 6 Actual and Projected Distribution of Children and Older Adults in the Population: 1900–2050**

SOURCE: U.S. Census Bureau, 2009.

(NP-P4) Projected Resident Population of the United States as of July 1, 2050, Middle Series

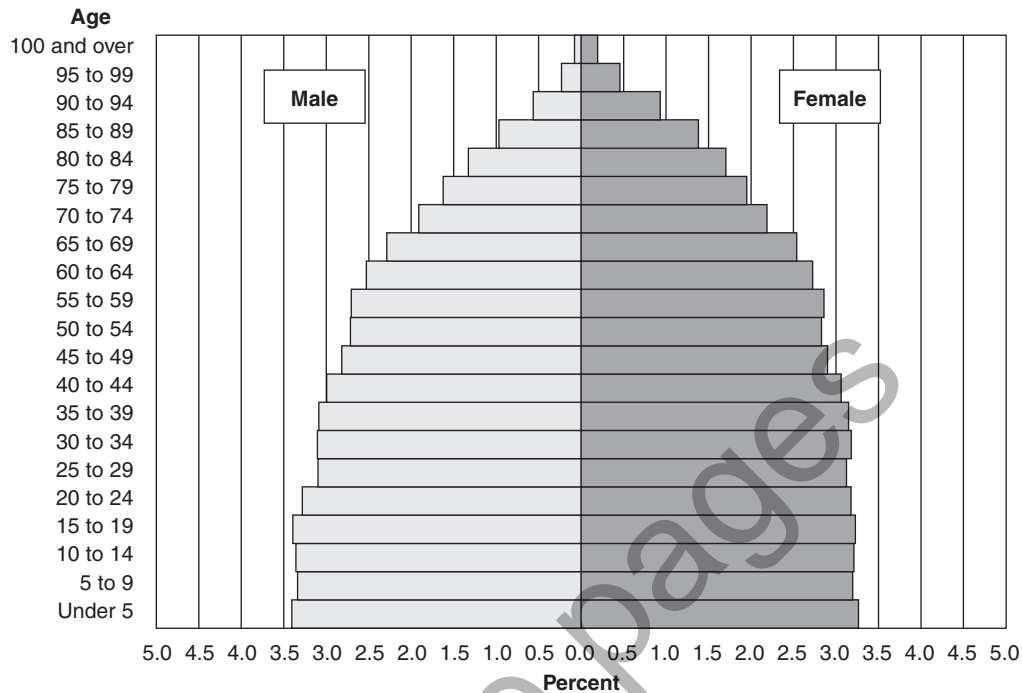


FIGURE 7 (Continued)

## Support Ratios

One aspect of the changing age distribution in our population that has raised public concern is the so-called “old-age support ratio.” The way this ratio has generally been used is to indicate the relationship between the proportion of the population that is employed (defined as “productive” members of society) and the proportion that is not in the workforce (and is thus viewed as “dependent” or as “requiring support”). This rough estimate is obtained by comparing the percent of the population age 20 to 64 (the working years) to the proportion age 19 and under (yielding the youth dependency ratio) and over 65 (yielding the old-age support ratio). This ratio has increased steadily, showing that proportionately fewer employed persons support retired older persons today. In 1910, the ratio was less than 0.10 (i.e., 10 working people per retired older person),

compared with 0.21 in 2000 (i.e., five working people per retired person). Assuming that the lower birthrate continues, by the year 2030, a ratio of 0.36 (or fewer than three working people per retired person) is expected (U.S. Census Bureau, 2006a). These changes since 1960, along with projections through 2030, are illustrated in Figure 8.

Such a crude measure of support ratios is problematic, however. Many younger and older persons are actually in the labor force and not dependent, while many people of labor-force age may not be employed. Another flaw is that support ratios do not take account of the labor-force participation rates of different groups. For example, older workers, both men and women, have continued to remain employed during the economic downturn. In addition, baby boomers are setting the trend toward starting new careers in middle age and continuing to work in their