Aging, Health and Society

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Preface

We published a book in 1978 entitled *Aging and Health: Biologic and Social Perspectives*. At the time, we described three consensus points or reasons for doing the book. Despite the passage of ten years, these three consensus points continue to justify our efforts and are reflected in this new book.

First, our classes are still eclectic. Whether in sociology, health education or anthropology (our respective fields), these classes often include graduate students as well as advanced undergraduates. These students identify themselves as nursing, premedical and predental students; students in health education, public health and health promotion, the allied health professions, anthropology, psychology, social work and sociology are also well represented. Compared with ten years ago, more students identify themselves as gerontology majors or even as business majors broadly interested in the administration of nursing homes, hospitals or health care in general.

Second, students still bring a high level of interest and enthusiasm to the courses we teach. The field of aging or gerontology continues to develop at a remarkable pace, and public attention is riveted on issues of health and aging. Most people born in the United States during the twentieth century have already achieved or will achieve old age. How we deal with this phenomenon as individuals and how the society will deal with it remain important questions. For example, as of this writing, the Reagan Administration has put forth a proposal to expand Medicare and provide acute catastrophic health insurance for older Americans. Occupational opportunities for working with the elderly continue to increase, albeit not at the level they are needed.

Finally, there remain real problems in selecting text material for our courses. The choice seems to be between high-priced though narrowly-focused source books that are geared to advanced students and scholars, on the one hand, and encyclopedic works that are dry, uneven in appeal and very expensive, on the other.

We believe that this volume, not intended to be an encyclopedia of health and aging, effectively introduces students to the basic aging and health concerns of older people and to broader issues of aging, health and society. Most of the material presented here has been tested in our own classes, and the results continue to encourage us. Students seem to be more interested in gerontology when they leave these classes than they were when they began them.

The book is divided into three parts. Part I, The Basics of Aging (Chapters 1 through 5),

includes five chapters dealing with the demography of aging; social, economic, and health characteristics of the aging population; biological theories of aging; and the social and psychological aspects of aging. Part II, Biomedical Aspects of Aging (Chapters 6 through 17), surveys the biomedical changes associated with the various body systems as they age. In addition, this part contains chapters on nutrition, drugs and aging, exercise, and sexuality in later life. Part III, Selected Issues in Health and Aging (Chapters 18 through 21), includes individual chapters on the patterns of health services utilization among the elderly, issues of institutionalization, alternatives to the provision of long-term care in institutions, and death and dying. A glossary and subject index are also provided.

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Kathy Annable deserves to be singled out for special acknowledgment. With grace and good humor, she has served as research assistant, word processor, proofreader, and all-round "gofer" on the creation of this book. Kathy, thank you!

Ten years ago, our editor was James Keating; our current editor at Jones and Bartlett is the same fellow. On both occasions, he provided all the rope and editorial assistance we required, for which we offer him our deepest thanks.

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Contents

PART I

The Basics of Aging

CHAPTER 1

The Demography of Aging

There are now more than 27 million people aged 65 years and older in the United States, and this group represents the fastest-growing American population. If the U.S. population of those 65 years and over were all grouped together, they would make up the most populous state in the nation, exceeding the population of California. Actually, there are more people aged 65 and older in the U.S. than the combined resident populations of New England (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut) and the Mountain States (Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah and Nevada).

Assessing the circumstances of old people in the United States, including their health status, needs and service utilization patterns, requires an understanding of how this group is currently composed, how population composition has changed from the past, and how composition of the elderly population may change in the future. Population attributes, such as *fertility, mortality and migration,* influence and are influenced by social and economic conditions. High birth rates (fertility) in the first decades of the twentieth century have yielded large numbers of elderly 65 to 75 years later. Progress in public health and medicine has reduced the rates of illness and mortality, especially among infants and the young, allowing more of the population to live to be old. Immigration to the United States has also had an impact on the growth of the elderly population in recent years. Migrants who were young adults at the time

of their immigration before World War I increased the numbers of persons in their respective age groups, leading to large numbers of older people decades later.

This chapter presents a systematic study of aged population trends and phenomena in relation to their social setting (Petersen, 1975). Much of the available data in the United States define the elderly as those 65 years of age and older. Although 65+ is an imprecise identifier of the older population, it is a useful designation for gerontologists, and we follow it in this chapter. This definition is not universal, however. We all may recognize the differences between 20-year-old persons and 40-year-olds, but we often overlook the same 20-year difference between those who are 55 and those who are 75. Neugarten (1974) makes the distinction between the *young-old* (55 to 74 years of age) and the *old-old* (75 years of age and older). Recently, the National Institute on Aging has sought research proposals to study those individuals 85 years of age and older. This activity suggests the usefulness of further subdividing the old-old into those 75 to 84 years *(the elderly)* and those 85 years and over *(the very old)*. The young-old are healthier, wealthier and better educated than the old-old, and their family and career experiences and expectations are quite different.

NUMBER AND PROPORTION OF THE ELDERLY

The elderly population of the United States has grown consistently since the turn of the century, when about 3.1 million men and women were aged 65 and over. By 1990 this population is expected to increase to almost 31.8 million (see Table 1.1), a more than tenfold increase. This is much greater than the rate of increase for the total U.S. population, which is expected to increase little more than three times, from 76 to 250 million, in the same period.

As Table 1.1 shows, the absolute and proportional increases in the aged population are expected to continue into the twenty-first century, though at a slowed pace until the 2010–2020 decade. Between 1990 and 2000 the projected increase in the aged population is about 3.2 million, or a 10.2 percent decennial increase. This compares with the

TABLE 1.1 Total aged population and percentage of total population that is aged, 1950–2020

					Projections			
	1950	*1960*	*1970*	*1980*	*1990*	*2000*	*2010*	*2020*
65 years and older (thousands)	12,397	16,675	20,087	25,708	31,799	35,036	39,269	51,386
Percent of total population (%)	8.1	9.3	9.9	11.3	12.7	13.1	13.9	17.3
Increase in preceding decade (%)	—	34.5	20.5	28.0	23.7	10.2	12.1	30.9

Note: Based on Middle Series Census Bureau Projections. These projections are based on the following assumptions: (1) an average of 1.9 lifetime births per woman; (2) life expectancy in 2050 of 79.6; and (3) net immigration of 450,000.

Source: Tables 2.1 and 2.5 in J. S. Siegel and M. Davidson, *Demographic and Socioeconomic Aspects of Aging in the United States* (U.S. Department of Commerce, Bureau of the Census, CPR Special Studies Series P-23, No. 138, August, 1984.

6.1 million or 23.7 percent decennial increase projected between 1980 and 1990. This slowed growth rate in the elderly population is a reflection of the small cohorts caused by the low birth rate during the Great Depression and up to World War II. (All persons born during the same year who are analyzed as a unit throughout their lifetimes constitute a *cohort* (Petersen, 1975). The earliest of these small cohorts reach age 65 during the last decade of this century. When the postwar babies reach 65 shortly after the year 2010, the growth rate in the elderly population will again increase. Table 1.1 shows this; the projected increase in the elderly population between 2010 and 2020 is 30.9 percent. Later, this growth rate will most likely fall, reflecting a decline in birth rates that began in the 1960s.

Demographers have considerable confidence in these projections, because all those who will be elderly by the year 2050 have already been born. The accuracy of these projections will be determined ultimately by how accurately demographers predict mortality among these maturing individuals. This is not an easy task. For a time, demographers employed a single assumption of regular small declines in mortality rates among older adults. Census Bureau demographer Jacob S. Siegel (1979) indicates that this is no longer a safe course to follow. Death rates may decline at different rates in successive periods, or may even rise occasionally as they have in the last several decades. Crimmins (1980) suggests that we have entered a new era of mortality decline due primarily to reduced death rates from cardiovascular diseases and death at older ages. If this is so, there would be a substantial increase in the number of people over 65 in the population.

How accurate have past projections of the older population been? U.S. Census Bureau projections of the population 65 years of age and over for 1975 were published at various dates from August, 1953 to December, 1972 and varied from 20.7 million to 22.2 million. The current figure used is 22.4 million, 7.9 percent above the low estimate and 1.1 percent above the high estimate. As Siegel (1979) points out, the percentage deviation from the current figure declined as the publication date approached 1975. This is what might have been expected. After all, the first projections were made about a future that was 22 years away; but in December, 1972, this future was only three years ahead.

This phenomenon has already appeared in projections for the year 2000. Until 1975 estimates for the older population of 2000 were in the 28–29 million range. In 1975 the Census Bureau increased the estimate to about 30.5 million. The latest projection is 15 percent greater, or almost 35.1 million people aged 65 and over in the year 2000. According to Siegel, these newly revised estimates reflect lower-than-anticipated mortality in the 1972–1976 period and the use of more favorable mortality rates in making future estimates.

Death rates are expected to continue to decline, though at a less rapid rate than in the past two decades (Siegel and Davidson, 1984). Still, there is the possibility of marked future reductions in death rates at the older ages. Such changes in the trends could bring a somewhat larger elderly population and greater increases than are shown by the Census Bureau's middle series of population projections used in this text. As Table 1.1 indicates, the middle series of population projections used by the Census Bureau

assumes mortality rates consistent with achieving an *average life expectancy at birth* of 79.6 years in the year 2050. Using the "highest" series of population projections, including the assumption that life expectancy in 2050 will be 83.3 years, the Census Bureau projects 36.6 million elderly in the year 2000 and 57 million by the year 2020. The "highest" series projects an aged population that is 1.6 million (or 4.5 percent larger than that projected by the "middle" series) for the year 2000 and 5.7 million (or 11 percent larger) for the year 2020.

What *proportion* of the total population older people will make up in the future will be determined in great part by fertility (birth rate) levels. The "middle" series of population projections used by the Census Bureau include an assumption of 1.9 lifetime births per woman. As Table 1.1 indicates, under this assumption, the elderly are expected to constitute about 17.3 percent of the total U.S. population by the year 2020. Using a "lowest" series projection, which assumes a fertility rate of 1.6, the Census Bureau estimates the elderly constituting 17.8 percent of the total U.S. population in 2020; with the "highest" series projection, which assumes a rate of 2.3 lifetime births per woman, the elderly would constitute 16.7 percent of the total population in the U.S. in 2020.

AGING OF THE OLDER POPULATION

Not only has the older population of the United States grown in size and proportion to the total population during this century, but it has also become more aged. Table 1.2 shows that the proportion of the aged who are 65 to 74 years of age has been getting smaller and will continue to do so until 2010; the proportion 75 and over has been getting larger, and this trend is expected to continue. In 1900 the proportion of those 65 and over who were 75 and over was 29 percent. By the year 2000 this figure will be about 50 percent. After the year 2010, the aging trend of the population 65 years and over should reverse itself as larger cohorts born in the post-World War II period enter the younger segment (65 to 74 years) of the elderly population. The median age of the total population is expected to rise from the present approximately 30 years to about 38 years by 2030.

TABLE 1.2 Percent distribution of the population 65 years and over, by age, 1950–2020

	1950	*1960*	*1970*	*1980*	*1990*	*2000*	*2010*	*2020*
65 years and over	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
65 to 69	40.7	37.7	35.0	34.2	31.5	26.0	29.8	32.3
70 to 74	27.8	28.6	27.2	26.6	25.3	24.5	21.9	25.6
75 to79	17.4	18.5	19.2	18.7	19.6	20.7	17.1	17.0
80 to 84	9.3	9.6	11.5	11.6	12.8	14.2	13.9	10.8
85 and over	4.8	5.6	7.1	8.8	10.9	14.7	17.4	14.3

Note: Based on Middle Series Census Bureau Projections. See Table 1.1 for explanation of assumptions.
Source: Siegel and Davidson, 1984, Table 2.6.

The aging of the older population expected to occur over the next two decades or so has important policy implications for local and state governments as well as for the federal government. Changes in the numbers and proportion of the elderly and very old should effect planning for the needs of the aged population. In brief, we should expect to see a relatively greater frequency of chronic debilitating conditions, accompanied by greater requirements for extended care among the oldest old (Siegel and Davidson, 1984).

THE DEPENDENCY RATIO

The growth of the elderly population has led gerontologists to look to the demographic relationship between it and the rest of the population. To the degree that the old are to be supported by the society to which they have contributed, this relationship may suggest the extent of social, economic, and political effort a society must make in supporting its elderly.

One measure used to summarize this relationship is known as the *dependency ratio.* Arithmetically, the ratio represents the number or proportion of individuals in the dependent segment of the population divided by the number or proportion of individuals in the supporting or working population. Although the dependent population has two components, the young and the old, students of gerontology have especially concerned themselves with the old-age dependency ratio. Definitions of *old* and *working* are "65 and over" and "18 to 64" years of age, respectively. Thus the old-age dependency ratio is, in simple demographic terms, (65 +)/(18–64). This does not mean that every person aged 65 and over is dependent or that every person in the 18-to-64 range is working. Still, we use these basic census categories to depict the relationship between these two segments of the society's population.

Table 1.3 shows old-age dependency ratios for the United States from 1930 to 2020. The

TABLE 1.3 Societal old-age dependency ratios: 1930–2020

Year	$Ratio = \frac{Population\ 65\ years\ and\ over}{Population\ 18\ to\ 64\ years} \times 100$
1930	9.1
1940	10.9
1950	13.4
1960	16.8
1970	17.6
1980	18.6
Projections	
1990	20.7
2000	21.2
2010	21.9
2020	28.7

Note: Based on Middle Series Census Bureau Projections. See Table 1.1 for an explanation of assumptions.
Source: Siegel and Davidson, 1984, Table 8.14.

ratio has increased in this century and is expected to continue to do so until the year 2020, when it is expected to increase dramatically. During the decade between 2010 and 2020, the baby-boom children of the late 1940s and 1950s will have reached retirement age, thus increasing the numerator; and a lowered birth rate, such as now exists, means a relatively smaller work force population (18 to 64), reducing the denominator (Cutler and Harootyan, 1975). The projected old-age dependency ratio of 28.7 in 2020 indicates that every 29 individuals 65 years of age or over will hypothetically be supported by 100 working persons between the ages of 18 and 64. This constitutes a ratio of between 1 to 3 and 1 to 4. In 1930, this ratio was about 1 to 11.

Some demographers have begun to distinguish between a *societal* old-age dependency ratio (discussed above) and a *familial* old-age dependency ratio. The familial old-age dependency ratio can be used to illustrate crudely the shifts in the ratio of elderly parents to the children who would support them. This ratio is also defined in simple demographic terms: (population 65–79)/(population 45–49). This does not mean that all persons aged 65 to 79 need support or even have children, or that every person in the 45 to 49 age range is willing or able to provide. Yet we use these age categories to depict the ratio of the number of elderly persons to the number of younger persons of the next generation.

Table 1.4 shows familial old-age dependency ratios for the United States from 1930 to 2020. The ratios increased from 1930 to 1980, and then are projected to decline until the year 2020, when a dramatic increase is expected. In 1930 there were 82 persons aged 65 to 79 for every 100 persons 45 to 49. This figure reached 185 in 1980, and a higher figure of 220 is projected for 2020. Changes in the familial old-age dependency ratio result mainly from past trends in fertility. For example, the high ratio in 1980 reflects the combination of high fertility (and immigra-

TABLE 1.4 Familial old-age dependency ratios: 1930–2020

Year	$Ratio = \frac{Population\ 65\ to\ 79\ years}{Population\ 45\ to\ 49\ years} \times 100$
1930	82
1940	95
1950	166
1960	129
1970	135
1980	185
Projections	
1990	174
2000	126
2010	126
2020	220

Note: Based on Middle Series Census Bureau Projections. See Table 1.1 for an explanation of assumptions.
Source: Siegel and Davidson, 1984, Table 7.9.