chapter that goes beyond a mere description of the status of minority aged persons (the usual presentation) to an analysis of how "inequality" across the life span can be regarded as a central societal context within which these descriptive status outcomes can be framed. Similarly, Moen's chapter on gender goes beyond description to weave in theories of role transition and life-course processes.

I found the infusion of the life-course perspective throughout the volume to give it a certain integrity and connectedness. Whether this equates to "reductionism," I leave for others to determine.

The Remaining Outlier — Policy Studies

Most of the chapters in the Handbook are responsive to Myers' and Marshall's challenges to strengthen our research findings by enhancing our theoretical foundations and refining our methods of inquiry. They are written with a strong theory base and an acknowledgement of the research frontiers that remain to be explored. Two exemplars are found in Peter Uhlenberg's and Sonia Miner's chapter on "Life Course and Aging: A Cohort Perspective" and Carroll Estes, Karen Linkins, and Elizabeth Binney's chapter on "The Political Economy of Aging." The former enhances our conceptual thinking by clarifying the various meanings of "cohort" and ties the cohort perspective into that most contemporary of issues in social gerontology, "generational accounting." Similarly, Estes et al. clearly explain how a political economy perspective, that is, a perspective that recognizes how aging and old age are directly related to the nature of the society in which they occur, can help us to explain many of the aging policy issues being discussed today.

But the strong theoretical bases found in most chapters is conspicuously absent in most of the chapters that focus on policy-related issues, e.g., disability, economic and health status, living arrangements, and old age policies and programs. Many (although not all) of these chapters are found in the final section of the Handbook. They are descriptive and atheoretical and make little attempt to tie in relevant theories such as those found in a life-course, cohort, or political economy perspective. There is little attempt in these chapters to integrate political science theories (which are well summarized and utilized in the chapter by Robert Binstock and Christine Day on "Aging and Politics"). Yet, as Estes et al. note, "... social policy is the result of economic, political, and sociocultural processes and forces operating at any given sociohistorical moment."

In the preface to the 4th edition, the editors make reference to how "[M]any continuing topics have been treated from viewpoints rather different than those in previous editions." They cite as one illustration the chapter on housing and living arrangements, which in the newest edition of the Handbook "emphasizes the linkages between living arrangements and issues of functional dependence within the elderly population." This is in contrast to its handling in the 3rd edition, which took a "social structural approach." In my view, this change represents a regression rather than a progression. A topic that had been presented in a theoretical framework in an earlier edition now becomes a chapter that is mostly descriptive and lacking in theoretical foundation.

As a researcher who comes from a policy background, I saw clearly from reading the new Handbook of Aging and the Social Sciences just how deficient those of us in the policy arena are in incorporating theory into our work. We need to go back to the social science disciplines to better explain the policy outcomes we describe. How are these outcomes rooted in our economic or social systems? What can social psychology tell us about the "scapegoating" of the elderly that has gained such currency in the policy arena? What has feminist theory to contribute to our understanding of poverty among older women? Does the theory of public choice in economics give us any better insights about how the government tries to maximize the social welfare of its older citizens? Theories abound in the social sciences that are waiting to be tested in the aging policy arena. Perhaps by the 5th edition of the Handbook, the policy-relevant chapters will catch up with the other chapters in the book as regards their theoretical richness.

Conclusion

The 4th edition to the Handbook on Aging and the Social Sciences has much to recommend it. There are no obvious omissions in its scope. It is readable and has extensive bibliographies following each chapter. It presents not only a critical review of research to date, but a discussion of areas for future research. The chapters provide rich topical reviews that can update one's knowledge in a variety of areas. It will serve, as its predecessors have, as a valuable reference text for researchers, professionals, and students interested in social gerontology.

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WHAT ARE WE TALKING ABOUT?


The fourth edition of the Handbook of the Biology of Aging has much in common with its predecessors in that it comprises a series of what are at best loosely related chapters written by experts in their respective subject areas. Most of the chapters are well written, and all are authoritative. As stated in the preface, one goal of the editors was to update chapters critical to aging research, such as the use of animal models and human subjects, and chapters on subjects of broad interest to gerontologists, such as exercise, immunology, and nutrition. The other goal was to address areas of great recent growth, such as the genetics of aging, the cellular and molecular biology of aging, and the neurobiology of aging. They have been successful in addressing these goals.

In spite of this accomplishment, the fourth edition, like its predecessors, will not make the positive impact on biological gerontology that a book in such a popular and well respected series should achieve; the reason for this deficiency stems from the fact that each chapter is a free-standing review article, which could just as well have been a minireview in the _Journal of Gerontology: Biological Sciences_, for example, rather than a component of a book. Indeed, one wonders why collections of such articles are published in books when their publication over time as
When the word is used in discussions with colleagues or in lectures at gerontological meetings or in articles published in gerontological journals, the question that immediately comes to mind is: “What are we talking about?” Indeed, the lack of standardized definitions of basic terms has impaired progress in biological gerontology because of faulty communication among those of us studying the biology of aging. Further consideration of the word “aging” will illustrate this problem.

Costa and McCrae (1995) define aging as what happens to an organism over time. This is a broad definition that encompasses developmental and postmaturational periods of life; and in regard to the latter, it includes processes that are preserved as well as those undergoing deterioration. This definition is totally unambiguous since only change with time or absence of change with time is involved. Unfortunately, aging is frequently used to refer solely to a subset of this definition, i.e., to the deteriorative changes with time during postmaturational life that underlie an increasing vulnerability to challenges, thereby decreasing the ability of the organism to survive. It is often difficult to know which definition of aging is being used by a colleague or lecturer or in an article; unless this is known, communication among us can be inaccurate and thus less fruitful. Clearly a different word needs to be used for the subset of aging encompassing postmaturational deterioration.

In his monumental book, Longevity, Senescence, and the Genome, Finch (1990) recognized the need for clarification and used the word senescence when referring to age-related changes that adversely affect an organism’s vitality and functions. Indeed, it is senescence as defined by Finch that biological gerontologists often mean when they use the word aging (this is true for laymen, too). For example, biological gerontologists refer to the biological age of an organism as being different from its chronologi- cal age. Clearly, they are not only discussing the passage of time, but in addition, the deterioration that has occurred during that time. Indeed, in recent years there has been a great effort to develop and validate biomarkers of aging, and in most cases what is being sought are not markers of chronological age but markers of biological age. Of course, senescence is a more ambiguous term than aging as defined by Costa and McCrae, because senescence involves not only the passage of time, which can be objectively measured, but also deterioration, which calls for subjective analysis and is difficult to quantify.

In few of the nineteen chapters of this book is there an explicit statement of what is meant by aging. However, in most chapters the context often implicitly provides the meaning. It is obvious that aging is used both in the sense of the definition of Costa and McCrae and of the senescence concept of Finch — often in the same chapter — with no attempt to explicitly inform the reader as to which is meant. Ironically, the most striking example of confusion over these terms is found in Chapter 6, the chapter on plants, which does define the terms explicitly. Plant biologists use both aging and senescence to refer to degeneration in the sense of diminished vigor with the potential to lead to death. Senescence is considered an active developmental process and thus presumably evolutionarily adaptive. Aging is viewed as a passive, nonprogrammed process. These definitions are almost impossi- ble to reconcile with those used by animal biologists, most of whom do not view senescence as evolutionarily adaptive, although they admit that, in some cases, it may be a byproduct of adaptation. This confusion could be circumvented by the plant biologists adopting the definitions of aging and senescence used by the animal biologists and adding to them the term programmed deterioration for what they now call senescence. However, it is hardly likely that those working in a discipline will readily change the well entrenched language of their field. In the absence of such a change, it is important to make very clear that plant biologists and animal biologists have very different meanings for the terms aging and senescence. This marked difference in definition of terms is particularly unfortunate in an era in which it has become apparent that the fundamental biological processes of plants and animals are remarkably similar. It is by addressing issues such as these that the Handbook of the Biology of Aging series could have made a strong positive impact on biological gerontology. Alas, the fourth edition does not.

I must add that less than careful copy editing has resulted in many minor errors such as misspellings, typographical errors, and at least one case of a reference cited in the text not being included in the list of references. Although not serious, these errors are annoying.

Do I recommend this Handbook? To answer this question, I asked myself if reading the book was a rewarding experience. My answer was yes, because the chapters on the rapidly developing fields contained much information that was new to me. However, as an investigator who has studied the biology of aging for many years, I was in a position to put the material I read into the proper context. I certainly recommend this Handbook to all those with a good knowledge of biological gerontology. I am hesitant to recommend it to those new to gerontology and to graduate students for the many reasons presented in this book review. However, under the guidance of a knowledgeable mentor, portions of this book can be a valuable resource for graduate students and postdoctoral trainees. Many of the chapters provide outstanding coverage of their subject areas. For example, the chapter by Campisi and her associates is the best that I have encountered in regard to the use of the cell culture system as a model for study of organismic senescence; these authors thought- fully evaluate the evidence for and against the value of this model and leave the reader with a clear picture of its current status. Thus, properly used, this Handbook can be
AN INSTITUTION: THE HANDBOOK OF THE PSYCHOLOGY OF AGING


Birren and Schaie’s Handbook of the Psychology of Aging series has long been an institution among students and researchers. I daresay that everyone in the field of psychology of aging has read chapters from these handbooks over and over again since the first volume was introduced in 1977 (Birren & Schaie, 1977). This volume is eagerly anticipated whenever a new edition is advertised by the publisher, and the chapters are considered to be authoritative, up-to-date reviews.

I remember spending close to an entire year preparing a chapter on memory for the 1985 Handbook (Birren & Schaie, 1985) after absorbing the chapter on the same topic by Craik in the 1977 edition. I have since treasured the well-worn and underlined 1990 chapter on memory by Hultsch and Dixon. The chapter by Smith on memory was the first one I examined when I started with the 1996 Handbook. Forty years ago the Handbook of Aging and the Individual (Birren, 1956) set the standard and the format for all subsequent handbooks by Birren and Schaie. The handbooks began with a section on history, systems, methods, and definitions; subsequent sections reviewed biological, social or environmental influences, and were followed by a major section on behavioral processes. For those who are students of cognition, the 1956 Handbook contained two chapters on learning processes, one by Edward A. Jerome and the other by Harry Kay. Memory was reviewed in a chapter on intelligence and problem solving by Harold E. Jones. It is interesting to note that these 1956 reviewers are no longer household names in the current literature, a sign of the changing of the guard.

How do Birren and Schaie remain on the cutting edge in their handbooks? First, the reviews have always been taken seriously by researchers, and those who were chosen as authors took the task seriously as well. Second, different reviewers have been used for the same topic so that different perspectives could be presented. Readers could see how the same literature was interpreted differently by different reviewers. It is common for journal articles to cite reviews of the same topic from different handbooks in this series, for the handbooks frequently review some non-overlapping areas within the same topic. Further, Birren and Schaie have invited different associate editors to join them so that editorial perspective has remained fresh over time.

Birren and Schaie have tried different formats in the three handbooks published since 1977. The 1985 Handbook included sections on psychological applications to the individual and psychological applications to society. These sections were continued in the 1990 edition (Birren & Schaie, 1990). Also in the 1990 edition, there were “half chapters” — shorter chapters used to introduce new topics or topics that had not been developed adequately in the research arena. This format was not continued in the 1996 Handbook.

The 1996 Handbook has fewer chapters and topics than the previous editions because the editors felt that there had not been sufficient progress made on some of the topics to warrant new reviews. The international flavor remains. The latest edition is divided into three sections: (1) Concepts, Theories, and Methods in the Psychology of Aging, (2) Biological and Social Influences on Behavior, and (3) Behavioral Processes.

This compact volume has again picked out current, cutting-edge issues in both resolved and unresolved areas. Three chapters on theories and methods are presented in the first section. In the traditional opening chapter by Birren with coauthor Schroots, the familiar concepts, definitions, and developmental sequence of gerontological psychology are presented. New in this chapter are summaries on patterns of change, as well as new developments in how we view the science of aging. The next two chapters outline problems in the traditional cross-sectional design and the “Achilles Heel” in the selection effects, along with issues in isolating individual differences in cognitive change, as well as issues in studying change over time. Both of these chapters present important methodological issues that gerontological researchers must master.

Section Two on biological and social influences presents six chapters, three in the biological domains, one bridging health and behavior, and two in the social domains. The three chapters in the biological domains focus on two general topics with which psychologists must gain more familiarity. The first is identifying genetic and environmental influences on observed behavior (Chapter 4); the other is behavioral neuroscience (Chapters 5 and 6). All three chapters are timely reviews. They show that psychologists are increasing their precision and methodologies as they examine a widening sphere of influences on behavior. The chapter on health and behavior (Chapter 7) provides an important discourse on the influences of health and disabilities on behavior, as well as the influences of behavior on health. Age-associated mediators are discussed. Although health is recognized as an important concomitant variable in behavioral aging research, this chapter points to the fact that health could take the center stage in influencing behavior. Finally, two emerging fields that have had important influences on the study of observed behavior are reviewed: social cognition (Chapter 8) and religion and spirituality (Chapter 9). Both could account for individual differences that have not been adequately explored in the study of behavioral differences and changes with age.

As in the previous handbooks, the section on behavioral processes receives the major emphasis. Twelve chapters...

References