

book review

Leonard W. Poon, Editor Washington, D.C.: American Psychological Association, 1980. XVII + 638 pp.

Aging in the 1980s: Psychological Issues

This is the third volume in a series of publications on aging issued by the American Psychological Association (APA). The first volume on the *Psychological Aspects of Aging*, published in 1956 and edited by J.E. Anderson, summarized the literature existing at that time. The second one on the *Psychology of Adult Development and Aging*, published in 1973 and edited by Carl Eisendorfer and M. Powell Lawton, presented the recommendations of the task force which represented APA at the White House Conference on Aging in November 1971, together with in-depth reviews of the major areas of research on the psychology of aging.

Aging in the 1980s: Psychological Issues, edited by Leonard W. Poon, is a collection of 43 articles organized into nine major areas. These nine areas are: clinical issues, neuropsychological issues, psychophysiological issues, psychopharmacological issues, cognitive issues, stress and coping, environmental issues, interpersonal relations and methodological issues. The book starts with a prologue and finishes with an epilogue and each of the nine sections is preceded by an introduction of the editor of the section. The volume has two major purposes: (a) to summarize and put into perspective selected issues on the psychology of aging and to establish research directions for the 1980s and (b) to identify what we now know and what we need to know about nine selected areas in the field of aging. In order to fulfill these purposes, the editor tried to present complementary and competing views from researchers and clinicians of different backgrounds. Selection of topics was based on a model in which psychological aging was considered from a

systems perspective, with the person, the environment, health, and behavior interacting over time. The chapters examine the discrete effects of the environment, health and behavior, as well as the combined effects of all three, on the aging person.

Section 1: *Clinical Issues* edited by Margaret Gatz, consists of three chapters which examine the mental health delivery system for older adults, as well as relevant issues in the clinical diagnosis and treatment of maladaptive behaviors.

In the first chapter, the aged are viewed within the larger system of the delivery of mental health services which are not yet considered adequate to meet the psychological needs of older adults. Consulting psychologists of the 1980s should provide both direct and preventive psychological services, with a goal of optimizing their development.

The second chapter focuses on assessment. Current assessment procedures frequently used with the elderly are reviewed critically and specific directions are recommended for future research. The authors stress the need for evaluation of systematically obtained data from several different fields and careful integration of these data to formulate intervention programs.

The third chapter discusses psychopathology and treatment, both in the community and in the institution. Questions concerning process and outcome research design, as well as methodology, are also considered.

In summary, these three chapters discuss how well older adults have been served, examine the effectiveness of different assessment and therapeutic practices, and suggest what the 1980s will offer.

Section 2: *Neuropsychological Issues*, edited by Marilyn S. Albert, consisting of three chapters, discusses the recent breakthroughs in neuropsychological techniques in relation to the understanding assessment, and treat-

ment of aging dementia and decline in cognitive functions.

The first chapter proposes the concurrent measurement of brain and behavioral variables in a defined group of elderly subjects as one method for evaluating age-related change. An on going study of this nature is being described.

The second chapter emphasizes the lack of valid norms for the elderly on specialized neuropsychological tests which create difficulties for the clinicians trying to interpret apparently pathological task performances in the aged.

The third chapter outlines some recently developed techniques for measuring the volume of fluid in the brain from Computed Tomography scans. The problems inherent in such measurements are noted and their effects on the measures described.

Section 3: *Psychophysiological Issues* *Brain Evoked Potentials*, edited by Stephen W. Harkins, consists of four chapters and deals with recent applications of event-related-potential techniques (ERPs) in the study of normal and abnormal aging. Event-related-potentials (ERPs) are «the spatial-temporal pattern of brain electrical activity that is synchronized to the onset of an afferent stimulus or that follows an expected event» as Harkins himself defines them.

Chapter 7, the first of this section, reviews recent findings concerning the brainstem auditory evoked potentials (BAEPs) in the study of the elderly. The effects of age on the BAEP in the later years of life are discussed.

Chapter 8 deals with age changes in the neurological and cognitive areas, as measured by ERPs. The authors review recent research and stress the relationship between brain and behavioral responses in the very healthy elderly.

Chapter 9 examines the feasibility of using a particular component of the auditory evoked potential as an objective means of evaluating cognitive functions in aging. The

authors conclude, that this component can be used to distinguish objectively between normal and abnormal changes in age-related cognitive functioning.

Finally, Chapter 10, the last in this section, reviews most of the research on brain potentials and aging. The authors present the historical context of this research, as well as future theoretical and clinical directions, for the psychophysiology of aging.

In summary then, Section 3 discusses the recent breakthroughs in psychophysiological techniques in relation to the understanding, assessment and treatment of the decline in cognitive functions.

Section 4: *Psychopharmacological Issues*, edited by Gail R. Marsh, includes chapters 11 through 15 and deals with the identification of physiological mechanisms involved in age-dependent changes in memory and other cognitive functions so that appropriate therapeutic treatment can be developed.

The chapters in this section illustrate the utility of the psychopharmacological approach to the investigation of memory and the changes it undergoes with age. Four of the five chapters deal with animal studies with only chapter 15, dealing with humans. All chapters reveal that common mechanisms may underlie the behavioral changes observed in aging animals and humans.

The findings of the chapters dealing with animals reveal that older animals learn and retain less well than young animals in one-trial-learning situations. Multiple-trial learning, more often, shows either no age differences or only small ones. Extinction is more rapid in the older animal. Generally speaking, both older humans and animals learn less rapidly or less intensely and thus have poorer memory traces later for recall.

As the editor of this section concludes, "there are wide gaps in both theory and knowledge of the psychobiology of memory, and even more in aging effects on this system. Both human and animal models of memory have been developed, and while they diverge on some aspects, there are many points of convergence." It seems, however, that the application of pharmacological and neurochemical techniques will be one of the most promising approaches to the studies of aging effects on memory.

Section 5: *Cognitive Issues* consists of two parts. Part 1, edited by Anderson D. Smith, deals with the *Advances in the Cognitive Psychology of Aging* and includes five chapters. The major focus of this first part is the research that has been done in cognitive processing. Four of the chapters deal with the four major areas of cognitive psychology: attention and perception, learning and memory concept formation and problem solving, and intelligence and cognitive ability.

More specifically, Chapter 16 highlights some recent trends and proposes some future directions in the study of attentional and perceptual processes in adulthood and old age.

Chapter 17 deals with the new directions in adult development of learning and memory. The authors describe results showing that when tasks are used that are more

familiar and more closely aligned to the day-to-day activities of older adults age differences may be lessened or even eliminated.

In Chapter 18 the authors review studies of problem solving and aging published since 1974 and make certain proposals concerning some of the prescriptions for aging research in this area for the next decade. They conclude that the goal of research in the 1980s should be to predict individual performance as a function of age.

Chapter 19 deals with another area of cognitive psychology: intelligence and how it is affected by old age. Whereas general decline was traditionally considered the primary characteristic of intellectual aging, it appears that intellectual aging is much more plastic and heterogeneous than past research implied. This finding could partly be explained by the fact that most intelligence research has used psychometric instruments which are based on the activities of young adults. It is suggested that future research using psychometric instruments which emphasize activities that are more familiar and more closely aligned to those of older adults will result in a view of intellectual aging that is differential rather than normative and dynamic rather than static.

The last chapter of this section, Chapter 20, deals with the problems of memory in old age. Research indicates that pronounced age decrements occur in the capacity as well as the time required to remember newly learned information. It is suggested that greater research efforts be made to link age differences in memory to personality variations in motivation and to the effects of intervention into problems of memory. This chapter serves as a bridge between this first part of Section 5 and the next one on speed of behavior.

In conclusion then, these chapters suggest that the greatest changes accompanying aging are the contexts in which people function. The cognitive psychology of old age is multivariate in nature and, therefore, research should be addressing the extent to which several factors affect age differences and age changes.

Part 2 of Section 5, edited by James E. Birren and M. Virtue Williams, deals with the *Speed of Behavior*. Its four chapters present a diversity of approaches to the organizational-interpretive problem found with aging.

Speed of behavior, along with memory, represent the two behavioral processes most consistently found to decline with age. Chapter 21, the first in this section, reviews evidence of a decline in speed of behavior with age, including its possible relation to memory. It suggests that this loss in speed is a reflection of a general mediating process in the central nervous system.

Chapter 22 deals with reaction time as an expression of hemispheric dominance. The evidence suggests that reaction time does not show a differential hemispheric effect. The authors conclude that decline in speed of behavior is a general phenomenon not linked as yet with any specific hemisphere.

The third chapter in this section deals with slowness of behavior with age in the performance of complex aptitude tests. The last chapter, Chapter 24, examines the effect

of task complexity on reaction time of the elderly. It appears that more complex tasks result in greater performance deficits for the elderly which is a consequence of a proportional slowing of the mental functions of the elderly.

In summary, then, Section 5 examines normative age changes in cognitive, attentional, and perceptual processes and behavioral slowing.

Section 6, *Stress and Coping*, edited by David A. Chiriboga, presents methods and models for studying stress and coping.

Chapter 25, the first in this section, compares stresses identified with a life-events instrument, with the stresses identified from questions dealing with chronic stress, anticipations of stress, and even the nonoccurrence of life events. They conclude that life-event instruments can provide important information about stress and adaptation throughout life but that additional dimensions of stress also deserve study.

Chapter 26 describes three scales that measure the degree of subjective distress from a particular life event and/or assess coping strategies for adjusting to that event. It presents illustrative data to demonstrate that intensive clinical studies can lead to measurements useful in larger scale field investigations.

The third chapter in this section discusses research studies that have investigated a particular stressful situation: coping with surgery. The results suggest (a) that in certain health-care situations, where little control over the stressor is possible, avoidance may be an effective coping strategy, and (b) that it may be difficult to provide patients with a sense of active control.

In the last chapter of this section an effort is being made to identify stressful events generated by the community. The results indicate that persons of different ages are affected by different kinds of community events. Older and younger persons are differentially vulnerable to the same environmental stimuli which suggests the wide range of conditions that are potentially stressful to older persons.

The chapters in this section urge research in the 1980s to devote more attention to stress and the elderly since this age group is more vulnerable to stressful situations.

Section 7, *Environmental Issues*, edited by Joyce Parr, includes three chapters which describe and analyze some of the limitations of our present knowledge regarding person-environment interaction. It is generally believed that the environment interacts with the characteristics of the individual to influence behavior.

In Chapter 29, the first in this section, the author proposes a four-component model of person-environment interaction for investigating potentially interactive influences on the behavior of elderly persons in their living environments. The argument is that it is important to differentiate and define as clearly as possible the separate components that participate in such interactions in order to interpret research findings.

The next chapter emphasizes the inseparability of the person and the environment in that the person cannot be defined apart of the environment since s/he is sur-

rounded by it. It stresses that the person-environment interaction should be viewed as a process.

The last chapter in this section considers historical and contextual factors and their influence on the psychological well-being of older people. The author stresses the importance of memories and expectations by which people interpret the environments in which they find themselves and suggests that they act in their environments in terms of their past history.

In summary, then, Section 7 deals with the influence of the interpersonal and family environment on the well-being of the aged.

Section 8, on *Interpersonal Relations*, edited by Lillian E. Troll, deals primarily with relationships encountered among family members. This section focuses on the qualitative aspects of the relationships such as the function they fulfill, communality of values, and feelings involved.

The first chapter in this section considers research and theory on the effects of parenting on parents within each of five parenting stages: (a) before becoming parents, (b) childbirth and postpartum, (c) early and middle years of parenting, (d) parenting with adolescents, and (e) parenting with adult children. Emphasis is placed on how parenting affects and interacts with other major roles in adults' lives across stages. The authors stress the need for the generation of theoretical models addressed to issues of parenting.

Chapter 33, the next in this section, examines the course of sibling relationships throughout adulthood and old age. It points to variation in functions of different siblings, at least by sex, with sisters having an effect different from that of brothers. It also suggests that the nature of sibling interaction—rivalry and affection—changes with time.

Chapter 34 focuses on the transition of midlife which is usually accompanied by predictable shifts in interpersonal relationships. The authors review recent research and theory on midlife development and mid-life transition and conclude by proposing a series of research, methodological, and theoretical questions that can be searched and, hopefully, answered during the 1980s.

The last chapter of this section deals with grandparenting, and more specifically with the grandparent-grandchild relationship. A review of the literature to date, by the author, leads to the conclusion that grandparent-grandchild interchanges are usually peripheral in the lives of both. However, more recent focus on this relationship suggests that it has more importance than was originally thought. This relationship may provide a clue to family integration and may also reflect coming shifts in family dynamics, such as those resulting from divorce and remarriage.

In summary, then, Section 8 examines the relations between the stresses encountered and the coping mechanisms adopted over life.

The last part of this volume, Section 9, on *Methodological Issues*, edited by John R. Nesselroade and Stephen W. Harkings, includes eight chapters and examines methodological issues, such as between — and within — subject research design,

mathematical models of the aging processes, and the application of modern psychophysical techniques in aging research.

According to the editors of this section, the chapters included can be divided into three parts: (1) the first part which includes the first three chapters of this section, deals with design, measurement, and analysis of intellectual abilities and personality in relation to normal aging. Chapter 36, the first in this part, deals with measurement issues. Chapter 37, on statistical modeling procedures and methods in aging research, examines the benefits that modeling offers to scientific theorizing and data evaluation but also some of the weaknesses of this approach. The last chapter of the first part in this section, deals with between — and within — group comparisons in aging research. The author gives special attention to the study of variability exhibited by older adults. (2) The second part of this section, focusing on the value of sensoriperceptual studies (which utilize modern psychophysical techniques) in psychological gerontology, includes four chapters. More specifically, Chapter 39 reviews briefly the sensory-perceptual studies that have investigated age differences in response to bias. Chapter 40, deals with the nature of the receiver operating characteristic (ROC), that is distributional effects on between group comparisons.

Chapter 41 treats in depth the application of Signal Detection Theory (SDT) procedures to the study of psychological aging. The last chapter in the second part of this section, deals with the measurement of sensation in the aged. While admitting to the validity of SDT for evaluating sensory and associated cognitive changes that take place with age and its contribution to understanding differences in sensitivity and response bias, the authors point also to its weakness in accounting for all changes in sensory functioning. They propose a new scaling method, called magnitude matching, for measuring sensation magnitude.

(3) The third, and last part of this section, concerns the complex impact of physical health on studies in psychological gerontology. Chapter 43, the only one in this part, reviews issues related to the assessment of health and behavior and their interaction with the psychology of aging. The authors point to the practical difficulty in the measurement of health status in psychological gerontology.

In summary, then, this section on methodological issues, emphasizes techniques and methods that appear to be promising for the study of behavioral aging.

This volume on *Aging in the 1980s* concludes with an epilogue including some thoughts on how to proceed from here by A.T. Welford, and a last word by the editor Leonard W. Poon.

In order to set some goals for the future of aging research one must look first of all at the progression that has been made up to now. The author sees progression along four dimensions: (a) from observation through the induction of unifying concepts to the formulation of models of process; (b) from studies of experience and behavior alone to their integration with data from other biological sciences; (c) from qualitative classification

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to quantitative measures; and (d) a to-and-fro progression between pure theory and application. Some thoughts are given on the research potential for development in any or all of these dimensions.

In the last word of this volume, the editor attempts to establish continuity between what has been accomplished and what lies ahead.

Any individual interested in gerontological research must read and study this volume. It is well-organized and very informative providing many interesting thoughts for future study and research. Although every aspect of psychological aging could not be covered in any one volume, nevertheless, the information included here is representative of what we now know in the nine areas covered by the sections of this book.

I believe that the major objectives of this volume have been achieved. Its success will of course be judged by the new thinking and research it will stimulate and the effects of which will be evident at the end of this decade.

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