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About the Editors-in-Chief

Margie E. Lachman, PhD, the Minnie and Harold Fierman Professor of Psychology at Brandeis University, is director of the Lifespan Developmental Psychology Lab and the Boston Roybal Center for Active Lifestyle Interventions. Dr. Lachman's research is on lifespan development with a focus on middle age and later life. With funding from the National Institute on Aging, her current work focuses on identifying modifiable factors that can protect against, minimize, or compensate for declines in cognition and health. Dr. Lachman was a member of the John D. and Catherine T. MacArthur Foundation Research Network on Successful Midlife Development and is currently collaborating on the 30-year longitudinal follow-up of the original MacArthur midlife sample, the Midlife in the United States Study (MIDUS). She was editor of the *Journals of Gerontology: Psychological Sciences* (2000–2003) and edited two volumes on midlife, *Multiple Paths of Midlife Development* (University of Chicago Press) with Jacquelyn James in 1997 and *Handbook of Midlife Development* (John Wiley & Sons) in 2001. She is the author of *Primetime: A New Vision for Midlife* (2026) published by Simon Element, an imprint of Simon & Schuster. She has published more than 200 articles and chapters in journals and books. Dr. Lachman has appeared on NBC's *Today*, the *CBS Evening News*, *CBS News Sunday Morning*, and NPR's *1A* and *TED Radio Hour*. Dr. Lachman is a fellow of the Gerontological Society of America (GSA) and Division 20 (Adult Development and Aging) of the American Psychological Association (APA). She received the Distinguished Research Achievement Award from APA Division 20 in 2003, the Distinguished Career Contribution to Gerontology Award in Behavioral and Social Sciences (BSS) from the GSA in 2015, and the Distinguished Mentorship in Gerontology Award from the GSA BSS in 2021.

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About the Associate Editors

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Shevaun D. Neupert, PhD, is professor in the Department of Psychology at North Carolina State University. Her work focuses on contextual and individual differences in processes that occur before, during, and after stressors. In particular, she connects these dynamic stress-related processes with cognitive, affective, and physical health outcomes across the adult lifespan. She is the principal investigator of numerous daily diary and microlongitudinal studies; each investigates interindividual differences in within-person processes over time. She consistently finds that it is important to simultaneously examine contextual as well as individual components. Her work has been featured in respected media outlets such as the BBC, *New York Times*, *Time* magazine, and the *Wall Street Journal*. She has received numerous awards including a postdoctoral research award from American Psychological Association (APA) Division 20 (Adult Development and Aging), the Outstanding Graduate Professor award (NC State), and designation as a University Faculty Scholar (NC State), and has been inducted into the Academy of Outstanding Teachers (NC State). She is a fellow of APA Division 20 and the Gerontological Society of America.

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Introduction

In this handbook, we offer the reader a comprehensive review of current topics in adult development and aging (ADA). Authored by noted scholars and rising stars, each chapter views ADA from a lifespan perspective. The authors discuss the processes of aging across adulthood, with most focusing primarily on midlife and later adulthood, although several bring earlier phases of the lifespan to bear on adult development.

A handbook such as this reviews the status of the field at this moment in time, a chance to consider how far it has progressed in the last century, and an opportunity to speculate on where it may be going. In this Introduction, we offer some thoughts on the history, the present, and the future of ADA. As developmental scientists, we recognize the importance of our history as well as the likelihood that today's knowledge will continue to evolve in the future and offer new perspectives and insights.

THE PAST

We begin by noting that psychology as an experimental science is about 150 years old, based on the founding of Wundt's laboratory at Leipzig, Germany, in 1879 (Munnichs, 1966). In the United States, G. Stanley Hall was the first professor of psychology, appointed at Johns Hopkins in 1884. A few years later, in 1892, Hall and a number of colleagues founded the American Psychological Association (APA), and Hall became its first president while also serving as president of the newly created Clark University.¹ Hall's relevance to ADA emerged when he retired as president of Clark after 30 years, and with his new-found freedom wrote the seminal scientific (and personal) text *Senescence, the Last Half of Life*, published in 1922. This hefty volume can be considered the starting point of the scientific study of aging (J. E. Birren, 1964a; Cole, 1984; Morley, 2004; Munnichs, 1966) and perhaps of lifespan developmental psychology (White, 2002). At the time that Hall was writing, the term *gerontology*, referring to the study of older persons, had recently been proposed (Metchnikoff, 1903), and Nascher (1914) had recently described geriatrics as the medical study of older people (cf. Achenbaum, 1995; Morley, 2004). After Hall's volume, the field saw little progress until Cowdry's (1939) edited volume on *Problems*

¹Among his other contributions (as described by Cole, 1984), Hall (1904) wrote the first text on adolescence (the eponymous *Adolescence*), founded several psychological journals (e.g., *American Journal of Psychology*, *Journal of Genetic Psychology*), and was responsible for Freud and Jung's first and only visit to America in 1909 (as described in Rosenzweig, 1994).

of *Ageing*, the first handbook of research on aging. However, this 750-page volume focused on biological aspects, with only one of 25 chapters (Miles, 1939) devoted to psychological aspects of aging.

With the outbreak of World War II in 1939 and America's subsequent involvement, most scientific research was refocused on the war effort. However, at the conclusion of the war in 1945, several events occurred that restored and increased efforts in the study of aging (J. E. Birren, 1964b). A number of significant events occurred in 1946, including (a) the creation of Division 20 of APA (originally named "Maturity and Old Age," and renamed in 1973 as "Adult Development and Aging"; B. A. Birren & Stine-Morrow, 1999); (b) the formation of the Gerontological Society² and the launch of its flagship journal, the *Journal of Gerontology*;³ and (c) the establishment of the Gerontological Unit at the National Institute of Mental Health (NIMH) led by Nathan Shock, which later became the intramural program of the National Institute on Aging (NIA) and the home of the Baltimore Longitudinal Study of Aging (Park, 2013). In 1950, the *Annual Review of Psychology* was initiated, and the next year published its first article on "later maturity" (Shock, 1951), followed by periodic updates over the next several decades (Baltes et al., 1980; Birren, 1960; Botwinick, 1970; Chown & Heron, 1965; Lorge, 1956; Schaie & Gribbin, 1975). In subsequent volumes, the chapters on ADA appeared more frequently, with articles focused less on surveying the broad field of ADA than on reviewing specific domains (e.g., Light [1991], on memory and aging; J. E. Birren & Fisher [1995], on speed of behavior; Lachman [2004], on midlife; Charles & Carstensen [2010], on social and emotional aging).

In 1953, James Birren became director of the Section on Aging at NIMH (J. E. Birren, 1964b), and he edited the first handbook devoted to the psychological study of aging, *Handbook of Aging and the Individual*, in 1959. J. E. Birren and Schaie later edited the *Handbook of the Psychology of Aging* (1977), and they and their successors published eight subsequent volumes that periodically summarized recent and ongoing developments in the field.

In the history of APA as an organization devoted to the study of ADA, several events are noteworthy. First among them was the volume by Anderson (1956) that documented a conference on psychological aspects of aging that was supported by APA Division 20 and funded by NIMH. This was followed by volumes created with the support of APA Division 20 in relation to the 1971 and 1980 White House Conferences on Aging (Eisdorfer & Lawton, 1973; Poon, 1980). In 1970, the first of nearly a dozen volumes from the West Virginia conferences on lifespan developmental psychology appeared (Goulet & Baltes, 1970), followed later in the decade by the first in the series on *Life Span Development and Behavior* (Baltes, 1978). In 1974, nearly 3 decades after Division 20 was founded, APA launched the journal *Psychology and Aging*, and the NIA was also initiated that year, with Robert Butler as the first director (Kelley et al., 2024).

Beginning in the 1980s, APA played a major role in the development and establishment of clinical geropsychology as a profession, supporting the Older Boulder conferences (1981, 1992) and the Pikes Peak conference (2006) that identified the skills and knowledge necessary to define clinical geropsychology as a specialty (Knight et al., 2009).

²Later renamed the Gerontological Society of America.

³The *Journal of Gerontology* was divided into four sections in 1988, and in 1995 into two separate journals, one focusing on biological and medical aspects of aging, the other on psychological and social aspects (Morley, 2004).

In 1988, a series of Master Lectures were presented at the APA Annual Meeting to provide psychologists with state-of-the-art reviews of recent work on adult development and aging (Storandt & VandenBos, 1988).

A seminal event for the psychology of aging in APA was the presidency of Norman Abeles in 1997, which led to the establishment of the Committee on Aging (CONA; <https://www.apa.org/pi/aging/cona>) and a mini convention on aging presented at the 1997 Annual Meeting, subsequently published as Qualls and Abeles (2000). In 1998, APA established the Office on Aging, which has supported the development of several guidelines (e.g., on dementia, on practice with older adults; <https://www.apa.org/pi/guidelines>). During the past decade, APA has published aging-related handbooks on clinical geropsychology (Lichtenberg & Mast, 2015) and dementia (Smith & Farias, 2018). With the publication of this handbook, a century after the field began with Hall's *Senescence*, APA has once again shown its continued commitment to and support for the study of adult development and aging.

THE PRESENT: APA HANDBOOK OF ADULT DEVELOPMENT AND AGING

As we enter the second quarter of the 21st century, with its continued expansion of the aging population, there is a growing need for psychologists and others to master the complex needs and concerns of this diverse group. This volume, the *APA Handbook of Adult Development and Aging*, is designed to fill this need. To provide robust coverage of the latter half of life, it adopts a lifespan developmental perspective to summarize essential topics in the psychological arena of adult development and aging. In the chapters that comprise this volume, we requested, and the authors have delivered, focused reviews of specific domains in ADA, summarizing the latest theories, methods, and research on ADA, with an emphasis on midlife and later adulthood. The content focuses on continuity and change in biopsychosocial processes across multiple domains of adult development.

The handbook is divided into seven parts spanning the major domains of ADA and related disciplines. The parts are Theory and Methods, Biological Factors and Health, Personality and Individual Differences, Cognition, Mental Health and Clinical Issues, Variability and Diversity in Development, and Social and Contextual Factors. Each chapter addresses the description, explanation, and optimization of a particular domain of ADA. Chapters consider the history of their domain, with a summary of key classic findings used to provide a context for discussing the major theoretical orientations and latest empirical work in the area. Adopting a lifespan perspective, each chapter considers early antecedents and pathways with a focus on key processes and outcomes in adulthood. Authors examine aging within historical and cultural contexts, with recognition of the diversity of development across such factors as socioeconomic status, sex/gender, race, culture, cohort, and historical period, and address both individual and social processes. When relevant, reviews of current practices and existing or potential interventions are included. Each chapter concludes with a discussion of unresolved or controversial issues and potential questions for future research.

In selecting and shaping the chapters in this volume, our intent was to provide a go-to resource for researchers and practitioners from a variety of behavioral science and allied fields who are interested in adulthood and aging. This handbook includes up-to-date information essential for graduate students and faculty who wish to learn

about the most important topics and research findings on adulthood, including midlife and old age. Professionals seeking an introduction to the field or to a given domain will find the latest information accessible in one place. It can be used in graduate courses or as preparation for specialty or doctoral candidacy qualifying exams. We hope that these chapters, and the perspectives they provide, will stand the test of time, and will continue to offer valuable insights into the psychology of adult development and aging.

Part I: Theory and Methods

In Chapter 1, Susan T. Charles and Joseph A. Mikels give an overview of the psychosocial theories that guide research on adult development and aging. They provide a useful framework for the design of research and interpretation of results. In Chapter 2, Kevin J. Grimm and Matt L. Miller give an overview of developmental research methods for the study of change. They discuss the latest methods for design, analysis, and modeling of longitudinal data collected over years or longer. In Chapter 3, Stacey B. Scott, Samantha S. Corley, and Kelly A. Romano discuss issues in the design, collection, and modeling of data on intraindividual variability collected over “micro” timescales such as days, weeks, or months. They consider both observational (e.g., diary) and event-based studies sampling behavior at fixed or random intervals. In Chapter 4, Thomas E. Fuller-Rowell and Colby Leonard examine the role of childhood socioeconomic adversity in adult health. They focus on socioeconomic status in childhood as a risk factor for health later in life and examine theoretical perspectives for examining health disparities. In Chapter 5, Avron Spiro III and Robert J. Waldinger review the history of longitudinal research for the study of adult development and aging. They provide an overview of the benefits of longitudinal research and offer insights into some of the latest issues. In Chapter 6, Derek M. Isaacowitz and Hannah E. Wolfe make a case for the importance of open science and the goal of reproducibility. They use the sample case of emotion research to illustrate why transparency is critical for the field.

Part II: Biological Factors and Health

Chapter 7, by Tara L. Gruenewald, focuses on age-related changes in neuroendocrine, immune, and cardiovascular system biomarkers and function. She considers the impact of such changes on health and disease in later life and compares biological versus chronological aging. Chapter 8, by Nicholas A. Turiano, Damaris Aschwanden, and Sarah J. Miller, examines the contributions of behaviors and lifestyles to health. The authors provide an up-to-date review of the research on modifiable factors and interventions that promote and contribute to healthy aging. In Chapter 9, Jennifer L. Campos, Karen Z. H. Li, Natalie A. Phillips, M. Kathleen Pichora-Fuller, and Walter Wittich give an overview of the changes that occur in sensation and perception with aging. They review the latest research on vision, hearing, vestibular and somatosensory systems, smell, and taste. In Chapter 10, Agus Surachman, Elissa Hamlat, and Elissa Epel review the research on geroscience with an emphasis on biomarkers and stress processes associated with biological aging. They cover cutting-edge research on inflammation, epigenetics, telomeres, and allostatic load. In Chapter 11, Chandra A. Reynolds reviews the genetics and epigenetics of traits important for adult development and aging. She discusses both the traditional twin and family models, as well as more recent molecular approaches to examining genetic and environmental influences, with examples focusing on personality, cognition, and mental health.

Part III: Personality and Individual Differences

In Chapter 12, Daniel K. Mroczek, Eileen K. Graham, Tomiko Yoneda, and Jing Luo cover the research on individual differences in personality development in adulthood. They consider what factors influence personality change as well as how personality affects outcomes for health, career, and other domains in later life. In Chapter 13, Margie E. Lachman and Shevaun D. Neupert examine the contribution of psychosocial variables, such as sense of control, purpose in life, and social support, in relation to health. They present behavioral and biological mechanisms that can help to elucidate the mechanisms involved in linking beliefs and attitudes with health outcomes. In Chapter 14, Manfred Diehl gives an overview of the research on subjective views of aging. He presents findings on the role of subjective age in adult development and the latest work on awareness of age-related changes. In Chapter 15, Jutta Heckhausen, Carsten Wrosch, Jacob Shane, and Richard Schulz present key aspects of theory and research on motivation and goals in adulthood. They give an overview of strategies for goal pursuit and adjustment. In Chapter 16, Claudia M. Haase reviews the literature on emotion regulation in adulthood. She examines the adaptive changes in emotion regulation goals and strategies and their role in interpersonal relationships. In Chapter 17, David M. Almeida, Jennifer Piazza, Jacquie Mogle, Kelly E. Cichy, and Robert S. Stawski examine the role of daily stress for health and well-being in adulthood. They review age differences and historical changes in the experience of stress exposure and reactivity.

Part IV: Cognition

Chapter 18, by Christopher Hertzog, focuses on changes in cognitive abilities and intellectual functioning throughout adulthood, with an emphasis on individual differences. He critiques the research from conceptual and methodological perspectives. In Chapter 19, Anne C. Krendl and Lucas J. Hamilton review the work on social cognition in adulthood. They focus on both behavioral and neural evidence for changes in key aspects of social cognition in adult development and aging. In Chapter 20, Ute Kunzmann covers the conceptual and empirical work on wisdom and age. She provides analysis of the key findings about how wisdom develops and is manifested throughout adulthood. In Chapter 21, Lars Nyberg and Nina Karalija cover the latest work on the aging brain in relation to cognitive changes with age. They review the current methods used to study neural changes in the brain and the key findings from the research on cognitive neuroscience. In Chapter 22, Daniel A. Nation examines healthy brain aging in relation to neurocognitive disorders such as Alzheimer's disease and related disorders. He presents research on the risk factors and causes of various forms of dementia. In Chapter 23, Laura B. Zahodne and Kiana A. Scambray examine cognitive resilience and reserve. They provide an overview of the work that shows the role of cognitive reserve in the face of neuropathology.

Part V: Mental Health and Clinical Issues

In Chapter 24, Robert F. Krueger, Colin D. Freilich, and Susan C. South review methods used to study genetic and environmental influences on development. They consider the role of environmental exposure and genetics in longevity and well-being in adulthood. Chapter 25, by Amy Fiske, Montgomery T. Owsiany, Amanda R. W. Steiner, and Julie Loebach Wetherell, examines conceptual models and research on depression and anxiety in adulthood from lifespan developmental and psychopathology perspectives.

They consider risk factors as well as methods for assessment and treatment of these disorders. In Chapter 26, Frank J. Infurna and Nutifafa E. Y. Dey examine how resilience functions in adulthood. They focus on protective factors and strategies that are effective in adapting to risks and adversity. In Chapter 27, Rebecca S. Allen, Shayne S.-H. Lin, Timothy K. Ly, and Michael R. Buxton provide a broad overview of clinical geropsychology, considering aspects of practice, science, and policy, with a focus on behavioral, mood, and neurocognitive disorders. They conclude by offering thoughts about the future of mental health in aging. In Chapter 28, Paul Verhaeghen, Grazia Mirabito, and Shelley N. Aikman examine the role of mindfulness and meditation as alternative therapies for healthy adult development. They provide research findings on mind–body interventions that are effective for health and well-being.

Part VI: Variability and Diversity in Development

In Chapter 29, Johanna Drewelies, Nilam Ram, and Denis Gerstorf examine the role of historical context from a lifespan developmental perspective. They provide a review of important historical trends for key areas of adult development and aging. In Chapter 30, Nicole Long Ki Fung, Hongmei Lin, Hanyu Zhang, and Helene H. Fung focus on cross-cultural perspectives on adult development. They explore the diversity of development through the lens of cultural differences at the intrapersonal, interpersonal, and societal levels. In Chapter 31, Adolfo G. Cuevas, Ruijia Chen, Danielle M. Krobath, Patrick J. Smith, Michael V. Stanton, Agus Surachman, and Haowei Wang examine how psychological and societal factors contribute to disparities in health, considering their impact in various racial and ethnic groups. In particular, they consider how various stressors differ among groups in their effects on health in adulthood, and they suggest various interventions to address disparities in health. In Chapter 32, Toni L. Bisconti, Michael T. Vale, and Aimee Trunko focus on key issues related to sexual and gender identity in adulthood. They review the research on discrimination against queer adults and suggest approaches to provide support and to address the risks to their health and well-being.

Part VII: Social and Contextual Factors

In Chapter 33, Mo Wang, Zhefan Huang, Chengquan Huang, and Junhui Yang explore trajectories of work and the transition to retirement. They examine different pathways to retirement and their implications for health. In Chapter 34, Karen L. Fingerman, Nicole Richards, and Susan T. Charles examine the nature of close relationships and how they change in later life. They consider the role of close ties for psychological well-being and physical health in adulthood. In Chapter 35, Liat Ayalon examines cross-cultural differences in ageism. She considers various sources of stereotypes about age and how discrimination plays out in different contexts. In Chapter 36, Steven H. Zarit and Allison R. Heid provide an overview of the theoretical and empirical research on caregiving. They discuss the important role that caregivers play in the lives of older adults and consider interventions that can address the stress that is often experienced. In Chapter 37, Robert Joseph Taylor, Ann W. Nguyen, Meredith O. Hope, and Linda M. Chatters review the role of religious beliefs and practices and spirituality in adult development, considering their impact on well-being, mental health, and social relations across different racial/ethnic communities. Taking a lifespan developmental perspective, they discuss how these practices emerge in adolescence and affect behavior into later life. In Chapter 38, Louise C. Hawkey, Susanne Buecker, and Maike Luhmann provide

a clear account of the nature of loneliness in adulthood and later life and review the relevant theoretical and empirical approaches. They consider how loneliness changes with age, its risk factors, and its implications for physical and mental health. In Chapter 39, Sara J. Czaja and Walter R. Boot examine the role of technology for supporting health and independence in older adults. They consider some of the obstacles and potential solutions for older adults to adopt technology more widely to address social and cognitive needs. In Chapter 40, Hans-Werner Wahl and Denis Gerstorf make a case for the importance of understanding the contexts in which adults develop. They present a framework for considering how contextual factors contribute to functioning in multiple domains of life.

THE FUTURE

It is fascinating to consider the history of ADA and gerontology, and their origins in the early part of the 20th century. As developmentalists, we believe that in order to understand where the field is going, we must have a solid recognition of the past and a thorough understanding of the present (which we hope this volume provides). We offer this handbook to the field, with the hope that many if not all of the recent theories, data, practices, and methods will be of use in the decade ahead. We celebrate the open science movement and the increased emphasis on transparency and replicability (Isaacowitz & Lind, 2019; Stine-Morrow, 2022). We applaud the NIA for its ongoing support of research, training, and data infrastructure (e.g., longitudinal studies of aging), while recognizing that psychologists should continue to study their own samples with varied designs to extend our knowledge of aging populations, constructs, and data. Collaborative and interdisciplinary approaches to developmental science are increasing and offer opportunities to combine and compare diverse samples of persons and measures in a cost-effective way. This is an exciting time in the field of ADA, and we hope that this handbook will help students, teachers, practitioners, and researchers appreciate its breadth and diversity and will serve as a foundation for advances in the field yet to come.

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