Introduction: Perspectives of Resilience and Aging

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Abstract This chapter provides a rationale for the theme of this book, an overarching conceptual framework, and summarizes and integrates the other 11 chapters. It will also detail the Friesen Conference, entitled “Understanding and Fostering Resilience in Older Adults,” held at Simon Fraser University, June 10–11, 2019, that served as a springboard for this work. This chapter also positions resilience thinking against broader theoretical developments in the gerontological literature, including positive and developmental psychological approaches of aging, the selection, optimization, and compensation (SOC) model, life-course theory, stress and homeostasis theory, person-environment theory, socio-environmental theory, complex systems models, community development approaches, and successful aging models. It is contended that conceptual, theoretical, and measurement developments as well as innovations embedded in this volume will generate a new phase in resilience research applied to aging and older adults. This volume is particularly relevant in the current and post-COVID-19 era, which has placed aging-related issues in the forefront.

Keywords Resilience · Aging · History · Theoretical framing · Methodological challenges

Background

We have transitioned into a new phase of population aging—one that is characterized by a period of the most rapid aging in the United States, Canada, and many other nations. This is due to declining fertility, coupled with the aging of the large baby boom cohorts and extended life expectancy. As more individuals reach the
upper levels of the age structure, the likelihood of experiencing age-related challenges will rise, thereby placing additional burden on health and social support systems. The degree to which older adults bounce back from different types and combinations of adversity or deal with adversity better than expected is termed resilience. While research has been accumulating that identifies inherent abilities and external resources needed to adapt and navigate stress-inducing experiences among aging and older adults, significant gaps remain in understanding the unique elements and processes of resilience. Some of the key challenges that older people experience include mental and physical health problems, especially multimorbidity; family change, such as widowhood; socio-economic deprivation; social isolation and loneliness; ageism and discrimination; housing problems; and environmental disasters, to name a few.

The current COVID-19 pandemic has raised the profile of gerontology and alerted experts working in academic, government, community, and private sectors to a new set of challenges. The relevance of resilience and aging research, knowledge and its translation into practice has become heightened for a number of reasons. Older adults are at an increased risk of experiencing deleterious outcomes if they contract COVID-19, ranging from lasting health complications to mortality. They are also more challenged than most individuals and families with respect to adaptations to the physical distancing policy. These inequities in adversity are most pronounced for the most vulnerable older people in society, especially those living in long term care, assisted living, or congregate care environments. Most COVID-19 deaths have been among this group. Furthermore, even though the majority of older adults living in the community in private households are relatively healthy and active, the pandemic has produced greater levels of stress, social isolation, and barriers to meet day-to-day needs. Physical distancing has exacerbated many of the social issues that many older individuals face, covering a large spectrum of health care, economic, physiological, social, and psychological issues. The COVID-19 pandemic has revealed the inadequacies in our current system-level structures, thus alerting us to focal areas for response and reform. Extending our knowledge of the role of resilience and aging will help society to maximize health and wellness in the face of a range of changing adversities.

A series of 12 chapters in this edited volume address several overarching questions pertinent to resilience and aging. These include: how do we conceptualize, model, measure, and analyze resilience; why do some older individuals/families/communities adapt to adversity better than others; what are the modifiable behavioral protective/risk factors related to resilience; how can we foster resilience at the individual/community level; and which interventions and public health approaches show the most promise? Indeed, the chapters comprising this book present cutting-edge science at the conceptual, methodological, empirical, and practice levels applied to emerging resilience fields in gerontology. Thus, the proposed volume will expand our understanding of how resilience works at the individual, family, and community levels; identify vulnerable groups of older adults who often face several concurrent challenges; examine different forms of resilience and their measurement; and isolate risk and protective factors.
This work identifies and elucidates promising areas for future research, as well as developments and potential new frontiers in policy and practice linked to these areas. Supporting and enhancing resilience through technological, social, and/or community-level, and public health advances in geroscience (the intersection of basic aging biology, chronic disease, and health) will help those facing adversity to thrive by harnessing, stretching, and leveraging a wide array of potential resources from the individual to the societal level. The promotion of healthier older populations has far-reaching consequences for health care and social/community support systems, both in terms of public health, and the development and implementation of innovations in treatment and practice guidelines.

Nine of the 12 chapters comprising this volume were based on presentations that were delivered as part of the John K. Friesen Conference held at Simon Fraser University, June 10 & 11, 2019, entitled “Understanding and Fostering Resilience in Older Adults.” The conference drew over 100 participants interested in the emerging field of resilience and aging. Ten national and international speakers delivered keynote lectures at the conference and contributed chapters to this volume.

Early Resilience Manifestations

While there is not a singular definition of resilience in the broad literature, there is agreement that it entails overcoming significant adversity in order to regain prior levels of health and well-being or cope better than others facing the same adversity. Ungar (2008:225) states that resilience is “both the capacity of individuals to navigate the psychological, social, cultural and physical resources that sustain their well-being, and their capacity individually and collectively to negotiate for these resources to be provided and experienced in culturally meaningful ways.” Similarly, Windle (2011:152) describes resilience as effectively negotiating, adapting to, or managing significant sources of stress by applying resources within the individual, their life, and environment to ‘bounce back.’

Initially, resilience was applied to children and adolescents to understand how and why some youths overcome early life mental health adversity as a component of developmental psychology (Masten 2001, 2007). Since its early applications, resilience has been used as a strength-based approach to understand recovery in other sub-populations, vulnerable groups, and from different types of adversity, including older adults facing a variety of challenges. Researchers have encapsulated resilience thinking into five overlapping phases or waves (Masten 2007; Wister et al. 2016). The first wave of research identified qualities, characteristics, and resources within individuals and families that are associated with resilience primarily in terms of psychological outcomes (Masten 2007; Richardson 2002). However, gaps remained in the knowledge-base with respect to processes and mechanisms underlying resource utilization to foster resilience, in particular, from a life-course lens (Leipold and Greve 2009; Ong et al. 2009; Windle 2012).
The second wave of resilience research addressed adaptive and coping processes (Masten 2007; Ong et al. 2009; Richardson 2002). Central to these developments is stress theory, in which adaptive and coping processes, especially buffering effects of social support, interact with risk factors. An important development during this phase was the integration of an ecosystem perspective that acknowledged the interdependence of social and environmental systems (Stokols 1992; Pearlin et al. 2005; Ungar 2011; Wild et al. 2013).

In the third wave, extension of prior research was connected to the development of interventions to strengthen resilience (Richardson 2002; Masten 2007). Yet, measurement and conceptual challenges limited these advancements (Cosco et al. 2017; Ungar 2011; Windle et al. 2011; Windle 2012). The fourth wave of resilience research focused on multi-level analyses across micro-, meso-, and macro-levels, as well as traversing disciplines (Masten 2007). Efforts were also made to link resilience factors and processes. Research largely utilized psychological measures such as self-efficacy, mastery, optimism, etc. to examine this area of inquiry.

A fifth phase of development has been identified in which the prior generalized, meta-models are specified to particular problems and contexts, including those located in the field of gerontology (Wister et al. 2016). Some recent examples in gerontology include: family resilience and aging (Martin et al. 2015); genetic and physical resilience (Peters et al. 2019); successful aging (Resnick et al. 2015; Windle 2012); cultural specific resilience (Ungar 2011; Wiles et al. 2012), resilience and mental health (Cosco et al. 2018), multimorbidity resilience (Wister et al. 2018, 2019), resilience and widowhood (Carr, Chapter “Psychological Resilience in the Face of Later-Life Bereavement”; King et al. 2019), and work, retirement and resilience (Coon 2012) (also see subsequent chapters).

Theoretical Framing of Resilience and Aging

Resilience has theoretical roots in a constellation of social-psychological, sociological, and socio-environmental concepts and models, addressing adaptation to individual and environmental adversity. While this list is expansive, some of these include positive and developmental psychological approaches, life-course theory, stress and homeostasis theory, person-environment theory, and socio-environmental theory. Resilience models also have developed due to the limitations of successful aging models (Harris 2008; Pruchno and Carr 2017) and gaps in explaining adaptation to adversity (Cosco et al. 2017, 2018; Wister et al. 2016).

Positive psychology adopts an individual-level lens, focusing on the pursuit of adaptive, creative, and emotionally fulfilling aspects of human behaviour (Seligman and Csikszentmihalyi 2000). The advancement of well-being is determined by the strengths and resources (i.e., individual resilience) of people to adapt to life challenges (Emlet et al. 2011; Seligman and Csikszentmihalyi 2000). It also encompasses the idea of salutogenesis, which aims to study the etiology of health,
especially health-fulfilling aspects linked to a resilience framework, and is antitheti-
cal to the pathology perspective (Antonovsky 1996; Emlet et al. 2011).

A number of developmental psychology theories are also foundational to resil-
ience in their conceptualization of balancing gains and losses along the stages of life
required for optimal development (Baltes and Carstenson 1996; Boerner and Jopp
2007; Leipold and Greve 2009; Pearlin et al. 2005). The classic stress-coping model
contends that social support can intercede or buffer stress to reinstate balance
(Pearlin et al.’s 1990). The model of assimilative and accommodative coping
contends that coping is defined by two antagonistic processes. Assimilation is the
persistent effort to pursue goals through modification of life circumstances, whereas
accommodation entails adjustment of goals in the face of constraints (Boerner and
Jopp 2007; Greve and Staudinger 2006; Hardy et al. 2004; Leipold and Greve 2009).
In their study of positive adaptation and valuation of life, Jopp and Rott (2006)
found evidence of assimilation and accommodation processes of resilience, whereby
older adults were found to maintain their goal of social connectedness by replacing
face-to-face interpersonal contact with telephone contact during functional decline.

The selection, optimization, and compensation (SOC) model of aging and devel-
opment proposes a dynamic interlocking system of adaptation (Baltes and
Carstenson 1996; Wild et al. 2013. Based on this theory, selection is the decision
process of prioritizing, optimization is the activation of appropriate resources, and
compensation is the application of alternate means to maintain function (Boerner
and Jopp 2007). All three processes are integral to bouncing back from adversity, or
responding better than expected to adversity, embedded in aging processes. For
instance, positive adaptation (i.e., resilience) is enhanced when individuals align
available resources and goals (Baltes and Carstenson 1996). In this regard, Wiles
et al. (2012) found that the most resilient older adults tended to persist with activi-
ties that were important to them when challenged by multimorbidity.

Another cluster of theories push the boundaries of conceptualizing resilience
beyond the individual. Life-course theory is a paradigm that has been at the centre
of gerontology. It provides a bridge and a dynamic interplay between structural (i.e.,
historical, institutional, community, and cohort-related) and individual (i.e., social
resources and agency) factors that influence health and social trajectories of indi-
viduals as they age (Dannefer et al. 2009; Elder and Johnson 2003; Mitchell 2003;
Wister 2019). These same processes are applicable to resilience and aging theoriz-
ing. First, the life-course perspective purports that human development and aging
are lifelong processes that are influenced by the timing and intensity of early life
experiences, events, and transitions. These might entail childhood trauma or social
conditions that may weaken resilience or provide experiential learning to strengthen
resilience. Second, individuals proactively employ human agency to shape social
structures (e.g., the effect of voting for health care reform) (Mitchell 2003). Third,
historical events and the size of the age cohorts to which individuals belong influ-
ence experiences and trajectories. The role of the food industry on increasing obe-
sity could, for example, exacerbate chronic illnesses, such as arthritis, while also
eroding resilience by constraining physical activity level (Wister 2005). Fourth, life
course emphasizes that lives are lived interdependently such that we affect and are
affected by our social networks. The presence of a partner in older age can provide a social safety net to overcome adversity. Finally, life-course resources or capital available to individuals (e.g., genetics, literacy, knowledge, wealth, health, social relations, identity, competence) and life-course risks (e.g., genetics, class, race, ethnic, age, or gender stratification) create opportunities (advantages) or adverse conditions (disadvantages) that influence how life stressors are experienced (O’Rand 2006). Rybarczyk et al. (2012) review several studies in which evidence is provided, demonstrating how accumulated life experiences can inoculate older persons to negative health conditions. Coupled with a developmental perspective, life-course axioms point to a ‘resilience trajectory’ applied to aging, wherein previous life experiences of coping and overcoming adversity may enrich one’s ability to deal with the continued challenges of aging.

The above theories, however, do not fully explain how individual-level resilience is interconnected to multi-level environmental domains. Both complex systems models and socio-ecological approaches emphasize the interrelatedness and interdependency between individuals, social systems, and the environment (Linkov and Kott 2019; Linkov et al., Chapter “Science and Practice of Resilience: Disaster Systems Applications to Aging Model Development”; Stokols 1992). Complex systems models contend that understanding the effects of adversity on an individual requires a system-level analysis of risk and resilience. Similarly, the socio-ecological approach stresses balance between an individual’s needs and abilities and the demands of the environment (Greve and Staudinger 2006; Lawton 1980; Lewin 1951). Applied to physical and social environments, Lawton (1980) refers to the correspondence between the abilities and characteristics of the individual (their competence) in relation to the demands and resources of the surrounding physical (e.g., housing) or social (e.g., family/friendship network) environment. All of these theories contend that a balance or homeostasis is necessary to enhance resilience trajectories. While there is an assumption that older people can withstand less environmental stress than more resilient younger persons, there are undoubtedly ways to optimize positive outcomes. In one application of this approach, Wild et al. (2013) offers a model of six nested domains to reflect contextual and collective dimensions of resilience for persons in later life. These include: individual resilience, household resilience, family resilience and neighbourhood resilience, community resilience, and, lastly, societal resilience. The idea of nested spheres of influence provides a useful conceptual framework to understand how resilience is the manifestation of a complex set of interrelated systems.

Finally, it is also useful to contrast resilience frameworks with successful aging (SA) models, given the historical prominence and formative role of the latter in gerontology. The SA model, which originally appeared in in the 1960s and further developed in the 1970s and beyond, attempted to explain why some older people age better than others (Rowe and Kahn 1997). This approach tended to broadly assess older people asf aging well if they were a) free of disease; b) high in cognitive and physical functioning; and c) actively engaged in life (DiPietro et al. 2012; Rowe and Kahn 1987). This has led to criticisms that the model overly concentrates on a small proportion of individuals meeting these criteria (Rowe and Cosco 2016),
which has led to some revisions. An important distinguishing feature of the SA model and resilience frameworks is the incorporation of adversity into conceptualizations of resilience, which brings sharper focus to a broader population of older adults, and more specifically, how adversity is experienced over the life course. Resilience models, therefore, extend the SA model by bringing attention to strength-based approaches to understanding positive and negative trajectories of aging (Pruchno and Carr 2017). Several fundamental axioms of resilience and aging can be drawn from this work, and serves as a platform for the chapters comprising this volume. (1) Resilience is a protective, adaptive, or coping response to aging-related adversity. (2) Adversity ranges in terms of type, severity, fluidity, and duration. (3) The underlying mechanisms and processes of resilience are connected to the life course of individuals and are central to impacts on key outcomes. (4) Resources are embedded in the individual, family, community, and broader socio-political environments. (5) Accessibility and availability of resources that can be harnessed shape resilience. (6) Resilience is experienced at multiple levels—including physiological and psychological disruptions to well-being, social manifestations, as well as those occurring at a community or system level. (7) There are both generic components of resilience common across types of adversity, populations, and time-periods, and specific ones related to unique dimensions or diversity of groups.

Methodological Challenges in Resilience Research

The operationalization of resilience stemming from theoretical developments along the five phases of development has been slower to materialize for researchers, in part, due to the challenges in a multifaceted conceptualization of resilience. Issues of scale and index development and testing, statistical approach to analyze responses to adversity (e.g., data driven, a priori approaches, moderation analysis, regression from mean of least squares) fold another layer of complexity to resilience research. Innovation in techniques, coupled with new data that can capture change, offer exciting challenges to this area of inquiry.

Contents of this Edited Volume

This book attempts to add to these developments in the resilience and aging literature in order to aggregate what is known in this emerging field. The 12 chapters aim to: (1) identify gaps and conundrums in what we know; (2) integrate and add coherence to the often siloed knowledge that has accumulated to date; (3) apply resilience and aging lens to current and emerging topics in gerontology; (4) carve new paths for innovative research; and (5) identify intervention, policies, and practical approaches that offer the most promise, as we move into the next developmental phase of resilience and aging.
The second chapter, entitled “Resilience in Older Adults: What It Is and How to Strengthen It,” written by Barbara Resnick, provides a deeper conceptualization of the concept of resilience with the purpose of uncovering some of the underlying processes embedded within this concept. Drawing on Richardson’s (2002) model of resilience qualities and traits, ranging from spirituality to social relationships, this chapter helps to unravel the multilayers of resilience and to direct researchers to potential areas for new science. These advancements lead to pockets for intervention developments that show promise in strengthening resilience in older adults. The third chapter, entitled “Resilience in Later Life: Responding to Criticisms and Applying New Knowledge to the Experience of Dementia,” authored by Gill Windle, further extends the above work in several ways. She elucidates how the concept of resilience applied to later life has proliferated in research, policy, and practice. The chapter also shows the ways that resilience research challenges aging stereotypes, ageism, and discrimination. In opposition to many early and even current studies of aging, this work, in parallel with the other chapters in this volume, considers the often-neglected area of positive adaptation. Yet, she acknowledges the criticisms and challenges that we face, especially when we attempt to use resilience research to direct public health policy for aging populations. These issues are brought to the foreground by applying a resilience framework to dementia in an effort to identify both pitfalls and pathways for researchers applying this approach.

In the fourth chapter, “Science and Practice of Resilience: Disaster Systems Applications to Aging Model Development,” Igor Linkov and associates aim to apply a complex systems model developed by the National Academies of Science to study natural disasters, including COVID-19 and other pandemics, to the field of resilience and aging. The authors weave together relevant literature in gerontology, medicine, and public health, in order to develop a new generalized framework for quantifying resilience for elderly individuals. This chapter points us to the importance of understanding resilience, and the mechanisms underlying it, as part of a multi-level integrated system that influences age-related adversity and the access to resources to recover. Linkov and associates detail how a complex systems model of resilience can be used to organize and reorganize health care, improve quality of life, and decrease the burden of care.

The fifth chapter, written by Andrew V. Wister, is entitled “Multimorbidity Resilience: Conceptual, Theoretical and Measurement Developments” and is separated into two parts. The first provides a rationale and describes the development of a theoretical model of multimorbidity resilience; the second details a new multimorbidity resilience index for use in population health surveys. Consistent with the fifth wave of resilience developments, Wister focuses specifically on multimorbidity as a major form of adversity facing older adults, which has become particularly relevant during the COVID-19 pandemic. The Lifecourse Model of Multimorbidity Resilience connects multi-level domains of influence that shape resilience outcomes, and identifies processes that affect illness disruption and reintegration of individuals by means of resilience mechanisms. The outcomes of wellness, recovery, and growth/development are connected to harnessing resources at the micro and macro levels in order to overcome the deleterious influence of multimorbidity.
A multimorbidity resilience index comprising functional, social, and psychological domains, capturing both adversity and adaptation, is described in the second section of the chapter. The criterion validation of the index, using the Canadian Longitudinal Study on Aging based on health care utilization and health status outcomes, is presented and offers support for this measure.

In the sixth chapter, entitled “Quantitative Approaches to Examine Resilience and Aging,” Almar Kok and colleagues address methodological issues in this field. The authors categorize major methodological approaches specifically applied in resilience research. These entail, for instance, estimating “buffering” effects of hypothesized protective factors in the effect modification, scale construction, comparison of resilience characteristics between predefined groups, data-driven subgroup identification in the latent class analyses, assessing predictors of adversity-outcome residual values in regression analyses, and stressor-response patterns in high-density time-series, based on a systems approach. Kok and colleagues review the strengths and limitations of each method and provide examples located in the research literature.

In the seventh chapter, entitled “Positive Affect as Source of Resilience in Adulthood and Later Life,” written by Anthony Ong, a developmental program of research on resilience and aging is presented. The authors selectively review the growing resilience literature, focusing on primary approaches, research findings, and guiding principles that characterize these studies. The chapter concentrates on psychological affect as a basic building block of resilience in adulthood and later life. They articulate how some individuals recover and/or maintain health and well-being due to a dynamic conception of positive affect as a central component of resilience. Ong and colleagues point us to future research directions to advance understanding of adulthood resilience.

Deborah Carr offers the eighth chapter, entitled “Psychological Resilience in the Face of Later-Life Bereavement.” The author eloquently articulates developments in stress and coping models and applies these to psychological resilience following late-life spousal loss. Contextual, relational, and personal characteristics associated with widowhood are connected to the stress-coping nexus to help us understand how psychological well-being can be compromised, as well as how coping resources can facilitate resilience. Carr moves the discussion beyond the individual in order to elaborate the layers of both social/structural and developmental factors that are linked to resilience among older bereaved spouses. She reviews, synthesizes, and puts into a resilience framework widowhood literature related to age patterns, relationship quality prior to spousal loss, social support, and spousal death contexts. The primary factors that distinguish those who withstand or bounce back emotionally to widowhood in later life, compared to those who do not are reviewed. In this chapter, Carr identifies potentially modifiable aspects of these factors for two purposes. First, she challenges notions that resilience is a trait-like feature of the individual alone. Second, she uses this discussion to direct future research efforts that can advance our understanding of resilience, stress, and coping among older widowed individuals, as well as potential practice/policy initiatives to foster resilience.
In the ninth chapter, entitled “Physical Resilience: Motor Function and Aging,” Sue Peters brings attention to one specific resilience domain—physical resilience. Defined as the ability to optimize/recover function in response to disease, injury, or age-related physical decline, physical resilience is examined as a fundamental component of aging. Peters attempts to answer two key questions: (1) What differentiates those who improve or bounce back from those who do not? (2) Can mobility rehabilitation be improved with knowledge of physical resilience? She elaborates on research literature in which this domain has developed, but also elaborates on its interconnections with other domains. Indeed, physical resilience is inherently multifaceted and linked with biological, sociological, and psychological factors. The chapter provides detailed discussion of physical resilience in relation to rehabilitation of older adults with various pathologies that limit function.

In the tenth chapter, entitled “Mobility Resilience Processes Among Older Adults,” Kishore Seetharaman and coauthors extend the prior chapter in its focus on mobility resilience. Drawing on resilience frameworks with processes of adaptation articulated in the Selective Optimization and Compensation (SOC) model, the authors investigate mobility challenges among older adults, termed mobility resilience. This integrative summary uses 41 primary studies found in the literature to identify the range of adaptive processes employed by older adults with mobility limitations. Classes of reintegration in the resilience model are identified and elaborated based on the adaptive processes found to be most relevant in the literature. This review provides important insight into: (i) why some older adults adapt to or recover from mobility limitations better than others; and (ii) the factors and processes involved in fostering mobility resilience. This work helps to develop innovative programs to enhance older adults’ health and well-being.

Sarah Canham applies resilience concepts to the burgeoning field of homelessness in the eleventh chapter, entitled “Advancing the Concept of Resilience for Older Adults Who Are Experiencing Homelessness.” In concert with prior chapters, the author identifies the lack of congruence of resilience conceptualizations, especially applications to vulnerable populations. Canham provides arguments that the lived experiences of homeless older adults are fundamental to understanding pathways to ‘bounce back’ and return to states of physical and psychological homeostasis at the latter stages of the life course. Drawing on results from a recent community-engaged research project that examined trajectories of homelessness after hospital discharge, this chapter provides applied research foci on cumulative adaptive capability across different temporal locations. A model of resilience among homeless older adults framed by an ecological perspective is developed and juxtaposed with earlier resilience models. The chapter concludes by providing the reader with a discussion of future research, policy, and practice.

The twelfth chapter, written by Janine Wiles, is entitled “Communities and Resilience: Contextual and Collective Resilience.” In parallel with several prior chapters, the author shifts resilience thinking beyond the individual to the community and broader environment. In addition, Wiles positions resilience as a collective, contextual, and participatory process and outcome. From an ecological perspective, Wiles elucidates micro, meso, and macro domains of influence, in which resilience
is negotiated. Of particular importance is the distribution of adversity and inequality affecting older people and of access to resources for resilience. The author develops the idea of collective resilience, which necessitates recognition of the ways in which thoughtful collaboration can be fostered, especially when our focus is with vulnerable and diverse older people. For instance, Wiles discusses how strong partnerships across sectors can be fruitful in strengthening community resilience.

Summary

The field of resilience and aging is one of the most rapidly expanding areas in gerontology. Building upon foundations laid in developmental psychology by notable researchers as Michael Rutter, Michael Ungar, Ann Masten, among others, resilience research has expanded its scope across the life course into research on older adults. As models of aging that do not incorporate adversity began to fall out of favour, for example, Rowe & Kahn’s classic tripartite “successful aging” model, a new wave of resilience research was ushered in and expanded upon. Researchers in a variety of disciplines and substantive areas are applying resilience concepts, theories, and measures to gain a deeper understanding of how individuals, families, communities, and societies respond to different types of adversity. Resilience models are not bound by disciplinary paradigms and are able to transcend perspectives, ranging from physiological responses to psychological adversities to psychological responses to physiological adversities. Similar to the interdisciplinary nature of the field of gerontology, resilience research is able to provide a multifaceted lens to the complexities of aging and age-related adversities that accompany this process. Together, the chapters comprising this volume offer new knowledge, evidence, policy, and practice in the emerging field of resilience and aging. The collective expertise of the contributors is not only expansive but also diverse in interdisciplinarity, reflecting comprehensive multi-level developments in this field of study. Given that we are in the formative phases of knowledge development in resilience, the reader is provided with both gaps and potential new science opportunities.

The greatest remaining schisms include consensus and consistency in conceptual definitions of resilience; advancements in both generalized and specified theories of resilience; development and testing of measures; innovation in designs best suited to understand resilience mechanisms, as well as structural associations; new and replicated studies in relevant sub-fields; and development and evaluation of programs and policies aimed at improving resilience among aging and older adults. As the field grows, we hope that these research and knowledge gaps will be filled, and the translation of this work will lead to a healthier population. Resilience and Aging: Emerging Science and Future Possibilities offers a springboard for this important work ahead.
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Introduction: Perspectives of Resilience and Aging

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