

Introduction

Decades of research have demonstrated that normal aging accompanies cognitive change. Much of this change has been conceptualized as a decline in function. However, age-related changes are not universal. Oft-found decrements in older adult performance may be moderated by experience, genetics, and environmental factors. To date, cognitive aging has largely emphasized biological changes in the brain, with less evaluation of the range of external contributors to behavioral manifestations of age-related decrements in performance. The goal of this book is to examine cognitive aging through the lens of a life course perspective. Understanding cognition within the context of both the life span (aging) and the life course (experience) is a relatively new approach to the field of cognitive aging. However, the approach has already pushed the field forward in theoretically and practically important ways. This edited volume will focus on fundamental principles that characterize a life course approach to cognitive aging by (1) presenting an overview of life-span and life course models of cognitive aging; (2) presenting the recent state of domain-specific models; (3) considering older cognition in socio-emotional contexts; (4) considering the influences of early life and biological predispositions; and (5) ending with a review of later life interventions.

Most researchers agree that cognitive change is a nearly inevitable part of advancing age. For most, childhood development involves increasing cognitive efficiency and abstraction ability, which peaks in the middle of our third decade, followed by a slow loss of cognitive efficiency, which may accelerate during the seventh decade. The cognitive changes that accompany advancing age result from several neurophysiological changes. Research in this area suggests that normal aging accompanies neuronal shrinkage and a breakdown in myelin integrity. Neural changes have been related to declines in cognitive function, and are primarily understood in the context of resource and compensation models of cognitive aging. Dozens of studies consistently demonstrate that as we age we demonstrate deficits in speed of processing, we are less efficient at inhibiting irrelevant thoughts, and we are less effective at managing complex cognitive tasks. Changes in available cognitive resources are thought to underlie these observed age-related deficits in performance. Additionally, such changes may impact neural regions that are recruited when older adults engage in specific cognitive tasks.

However, a subset of the neurotypical aging population does not demonstrate cognitive impairment, suggesting that cognitive decline or impairment may be

mitigated. Social and broader environmental context may account for some of the range in age-related cognitive changes demonstrated across different samples of older adults. Therefore, the primary goal of the proposed edited volume is to present current thinking and research that examines the relationship between lifestyle and environment and cognitive aging. This approach to cognitive aging allows for an examination of how both aging and experience impact the structure and function of the brain, and how compensatory mechanisms may emerge that result in what behaviorally manifests as successful cognitive aging.

This edited volume explores traditional models of cognitive aging in the context of nontraditional factors that may support the development of compensatory mechanisms. Although efforts to identify experiential and environmental factors that may impact cognitive aging are challenging, a large literature has emerged that focuses on the relationship between intellectual engagement, social activities, and emotional function and traditional models of cognitive aging. For example, self-reports of higher participation in cognitive, leisure, and social activities are related to better cognitive ability in middle-aged and older adults, and less age-related cognitive decline.

Each of the chapters in this volume tackles one or more of the unknowns about associations between the life course and cognitive aging, including the consideration of neural factors underlying some of the observed effects. Because participation in lifestyle activities is potentially modifiable even in mid- and late life, the implications of the research findings could be profound. Factors of interest, to name only a few, include aspects of social, leisure, and physical activity; social networks, support and relationships; and health behavior.