Cognitive and Social Neuroscience of Aging

Cognitive and Social Neuroscience of Aging is an introduction to how aging affects the brain, intended for audiences with some knowledge of psychology, aging, or neuroscience. The book includes figures illustrating brain regions so that extensive familiarity with neuroanatomy is not a prerequisite. The depth of coverage also makes this book appropriate for those with considerable knowledge about aging. This book adopts an integrative perspective, including topics such as memory, cognition, cognitive training, emotion, and social processes. Topics include consideration of individual differences and the impact of disorders (e.g., Alzheimer's disease) on brain function with age. Although many declines occur with age, cognitive neuroscience research reveals plasticity and adaptation in the brain as a function of normal aging. This book is written with this perspective in mind, emphasizing the ways in which neuroscience methods have enriched and changed thinking about aging.

At Brandeis University, ***Dr. Angela Gutchess*** *is an Associate Professor of Psychology with appointments in Neuroscience and the Volen Center for Complex Systems. She received her Ph.D. in Psychology from the University of Michigan and her B.A./B.S. from Boston University. Her research investigates the influence of age and culture on memory and social cognition, using behavioral, neuroimaging (fMRI), electrophysiological (ERP), and patient (aMCI) methods. She has authored over sixty peer-reviewed papers on these topics. Her research has been funded by the National Institute on Aging, the National Science Foundation, the Alzheimer's Association, and the American Federation for Aging Research. As a Fulbright Scholar, she had the opportunity to spend a research semester in Istanbul, Turkey, at Boğaziçi University. Dr. Gutchess was elected to the Memory Disorders Research Society. She currently serves as an Associate Editor for the journals* Memory *and* Memory & Cognition, *is an incoming Associate Editor for the Journals* Cognition *and the* Journal of Gerontology: Psychological Sciences, *and serves as a Consulting Editor for the journals* Psychology and Aging *and* Culture and Brain.

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This book is dedicated to Jutta Wolf, friend and frequent "writing day" companion.

Contents

Preface

This book is intended as an introduction to how the brain changes with age. It is intended for audiences with some knowledge of the fields of psychology, aging, or neuroscience who wish to learn more about the combination of these topics. The book does not assume intensive knowledge of neuroanatomy, as chapters include several figures illustrating the brain regions relevant to the processes affected by aging. The depth of coverage, however, also makes this book appropriate for those with considerable knowledge of the topic of aging, as it reviews primary literature across a wide variety of functions impacted by aging.

This book will introduce readers to the effects of aging on the brain, presenting research across several domains of psychological function, including memory, cognition and training of cognitive function, emotion, and social processes. Topics include consideration of individual differences and the impact of disorders (e.g., Alzheimer's disease or mental health) on brain function with age. Although behavioral methods typically identify declines with aging, particularly for cognitive abilities (e.g., perception, memory), cognitive neuroscience research reveals plasticity and adaptation in the brain as a function of normal aging. The book is written with this perspective in mind, emphasizing the ways in which neuroscience methods have enriched and changed our ways of thinking about aging, as well as an appreciation of the number of types of changes that can occur.

Advantages of this text include the following:

- Comprehensive review of the aging literature, with coverage of a wealth of topics
- An eye to social and emotional aging processes, which often are not treated in an integrated manner with cognitive processes
- A number of figures displaying effects, as well as an introduction to the methods, making the findings clearer to novices to the field
- Depth of coverage of the literature on different topics, making the text also appropriate for advanced students and scholars in the field.

The book is written for an advanced college-level audience, and could be adopted as a primary textbook for an advanced undergraduate or graduate course on the cognitive neuroscience of aging. It could be used

as a supplementary text for a course on aging; it is written to be used in tandem with a textbook overviewing the field of aging. As such, the text could be employed in courses about aging and life-span development, drawing from disciplines such as psychology, neuroscience, gerontology, nursing, human services, and pre-health tracks.

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