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BOOK REVIEWS

Illuminating Our Path: Understanding the Neural Development of Self-regulation

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Self-Regulation: Brain, Cognition, and Development, by Andrea Berger. 2011. Washington, DC: American Psychological Association, 224 pp., $79.95 (HB).

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Self-Regulation: Brain, Cognition, and Development, by Andrea Berger is a comprehensive review of theory and supporting research on the development of neural systems for the regulation of emotional, behavioral and cognitive functioning. This book is the fourth volume in the Human Brain Development series published by the American Psychological Association. It begins with a foreward written by Michael Posner, the series editor, who provides a succinct overview of the book and at the end, correctly states, that this book makes a "substantial contribution to the field of child development by bringing together so much of this research in a single place." Because of the many areas of developmental neuroscience that are working to understand how the brain and behavior change to develop self-regulation, keeping up with this literature is very challenging. Most impressively, Berger brings the reader up-to-date in each of these areas.

In the Introduction, Dr. Berger briefly describes and operationalizes the definition of self-regulation, and how self-regulation behaviorally develops over the course of early childhood. She writes, "We self regulate whenever we adapt our emotions and actions to situational requirements as well as to social standards and norms that we have internalized. Self-regulation encompasses skills such as paying attention, inhibiting reflexive actions, and delaying gratification" (pg 3). The remainder of the book provides the supporting literature for these two sentences. Chapter 2 discusses the basic behavioral mechanisms and the brain infrastructure needed for self-regulation. Chapter 3 delineates substantial research on how these underlying mechanisms and neural systems develop throughout childhood, summarizing research from studies of structural and functional magnetic resonance imaging and event-related potentials.

Possibly the most integrative chapter, Chapter 4 discusses individual differences in self-regulation. Berger provides a thorough summary of environmental influences in the development of self-regulation, discussing type and quality of caregiving and the home environment. She also describes research on the role that temperamental differences, fear, and executive control specifically have on the development of self-regulation. The portion on neuro-genetics is especially informative and will be an excellent literature resource on gene influence on behavioral aspects of self-regulation. Finally, this chapter presents the research on gene x environment/temperament interactions and their influences on self-regulation.

Chapter 5 focuses on the impact self-regulation has on social/emotional/behavioral development, including compliance, aggression, social relationships and skills, conscience and empathy, and academic achievement. Many theorize that self-regulation is a key impairment in psychopathology. Of particular interest for many neuropsychologists, Chapter 6 uses Attention Deficit Hyperactivity Disorder (ADHD) as a model for this discussion. The summary of research discusses behavioral aspects of dysregulation, brain abnormalities in ADHD, and individual differences in self-regulation in ADHD. Finally, Chapter 7 provides a brief discussion of interventions, computerized and behavioral, that impact the developmental trajectory of self-regulation, both individually and in group settings.

The writing is dense as it comprehensively covers seemingly all of the pertinent research, historically and currently. Much of the research is contradictory at times, likely the result of variations in techniques, developmental age, and our limited base of knowledge about how the brain actually develops and functions. Because of this, and the writer's style, clear and concise summaries are not typically provided. This book is not a must read for all, or even many, neuropsychologists. That said, this book is a must read for pediatric neuropsychologists with an interest in the preschool age. Additionally, those doing clinical work, research, or teaching in the areas of early development of brain-based systems of self-regulation will find this book a tremendous source of literature.