

Developmental Psychobiology

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Advances in neuroscience concerning the role of development in psychopathology are amazing. This book provides a window into work from animal models, early typical and atypical development of behavioral and neural systems, neuroimaging methods, and applied genetics to understand normal and abnormal development.

A highly informative introduction considers plasticity (sensitive periods in which brain processes can be modified) in contrast to stability (critical periods in which learning and brain processes become relatively irreversible) as characteristics of developmental learning; it examines how advances in imaging and genetic tools together supply the basics for comprehending interactions and subsequent changes in genes, hormones, and experiences that are expected to result in a better-integrated understanding of cognitive and emotional disorders. The book is divided into 5 chapters: "Developmental Psychobiology of Early Attachment" (Hofer), "Developmental Neurobiology of Face Processing" (Scott and Nelson), "Developmental Psychobiology of Reading Disability" (McCandliss and Wolmetz), "Developmental Psychobiology of Gilles de la Tourette's Syndrome" (Gallardo, Swain, and Leckman), and "Schizophrenia and Neurodevelopment" (Erickson and Lewis).

This book serves as a primer to aid in comprehending evolving areas of child psychiatry with in-depth but not overly technical explanations of the developing human brain, the consequences of early or delayed exposure to expected stimuli that turn genes on or off, and nonpharmacologic advances in biological psychiatry. Hofer's chapter integrates Bowlby's concepts of attachment¹ with advances in psychoanalytic object relations theory and brain neuroscience into a means to understand early, close social relationships. This review of exciting human and animal work considering evolution of the psychobiology of the early attachment bond and its maintenance should not be missed.

Scott and Nelson, in contrast, focus on how a highly developed visual-perceptual skill comes into being. They consider the neurobiology of normal in contrast to abnormal development. Integrating imaging with electrophysiology data, they

offer interesting insights about face processing deficits in children with autism. Their conclusions about the neurobiology of facial processing requiring social and dynamic information at a critical time in development are stimulating.

To demonstrate that developmental dyslexia has deficits in phonological processing at its core, McCandliss and Wolmetz provide useful tables summarizing neuroimaging studies. Their conclusions about differences in coping mechanisms between adults and children, neuroimaging monitoring of interventions, and implications for future interventions are well worth reading.

The last 2 chapters present insight into what some consider to be neurodegenerative disorders. Gallardo et al. provide the most succinct and comprehensive overview of the neurobiology of Tourette's syndrome that is currently available. They illustrate the integration of technological advances in furthering the understanding of complex neuropsychiatric disorders and explore how that knowledge may be used for therapeutic and preventive interventions. Erickson and Lewis undertake the daunting task of describing environment's role in the neurobiology of schizophrenia. Be prepared for a lesson in functional brain neuroanatomy and how developmental trajectories of neural networks may be altered early in life for later manifestation of a devastating disorder. However, the absence of consideration given to National Institute of Mental Health work describing the steady decrease with age of cortical volume in juvenile-onset schizophrenia and how those findings fit into the developmental model presented is disappointing.

In summary, this book presents examples of how animal studies and models with systematic behavioral observations, genetics, neuroimaging, and other technological advances are integrated to offer greater understanding of normal and abnormal cognitive and behavioral development. It will be of value to anyone working with children who wishes to understand where neurobiology currently stands and where advances can be expected. The book will be especially valuable to anyone who completed training more than 5 years ago.

REFERENCE

1. Bowlby J. Attachment and Loss, vol 1. 2nd ed. New York, NY: Basic Books; 1982

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