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978-0-521-84813-8 - Biopsychosocial Regulatory Processes in the Development of Childhood Behavioral Problems

Edited by Sheryl L. Olson and Arnold J. Sameroff

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BIOPSYCHOSOCIAL REGULATORY PROCESSES IN THE
DEVELOPMENT OF CHILDHOOD BEHAVIORAL PROBLEMS

In this timely volume, leading behavioral scientists describe recent advances in our understanding of the multiple biopsychosocial regulatory processes underlying the development of children's behavior disorders. A full spectrum of regulatory influences is addressed, ranging from genes to cultural factors. Individual chapters highlight the importance of developing research paradigms that synthesize biological, behavioral, and social-ecological influences and of viewing self-regulation as a complex system that reorganizes across development. The regulatory foundations of a diverse range of childhood behavior problems are examined, including anxiety, social withdrawal, depression, conduct problems, inattention and impulsivity, and sleep problems.

Sheryl L. Olson is Professor of Psychology and Research Professor in the Center for Human Growth and Development at the University of Michigan. She served as Director of Clinical Training between 2000 and 2005. She is Principal Investigator of the Michigan Longitudinal Study, a prospective longitudinal investigation of the development of self-regulation in young children at risk for school-age behavior problems. She is the recipient of the College of Literature, Science and the Arts Excellence in Teaching Award and the Undergraduate Research Opportunity Program Faculty Recognition Award for Outstanding Research Mentorship, both from the University of Michigan.

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Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo, Delhi

Cambridge University Press

32 Avenue of the Americas, New York, NY 10013-2473, USA

www.cambridge.org

Information on this title: www.cambridge.org/9780521848138

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First published 2009

Printed in the United States of America

A catalog record for this publication is available from the British Library.

Library of Congress Cataloging in Publication data

Biopsychosocial regulatory processes in the development of childhood behavioral problems / [edited by] Sheryl L. Olson and Arnold J. Sameroff.

p. ; cm.

Includes bibliographical references and index.

ISBN 978-0-521-84813-8 (hardback)

1. Behavior disorders in children – Etiology. 2. Neuropsychiatry. I. Olson, Sheryl L. II. Sameroff, Arnold J.

[DNLM: 1. Child Behavior Disorders – etiology. 2. Behavior Control. 3. Child Development. 4. Child. 5. Emotions. 6. Self Concept. 7. Self Psychology.

WS 350.6 R344 2009]

RJ506.B44R44 2009

618.92'89 – dc22 2008031265

ISBN 978-0-521-84813-8 hardback

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PREFACE

The theme of regulatory disturbances in development is an exciting and timely topic. In recent years, there has been an explosion of research on regulatory processes governing the development and expression of child psychopathology. A diverse range of biological, behavioral, and social-ecological processes have been shown to play integral roles in the development of childhood behavior disorders. Conceptualizing the nature of these influences and “capturing” them in research paradigms remain strong challenges for developmental scientists. For example, when we refer to a child’s functioning as *dysregulated*, we could be describing atypical patterns of psychophysiological responding, extreme fluctuations of activity or attention, loss of control over behavioral impulses, or variations in the expression, intensity, duration, or patterning of emotional responding. Moreover, without knowing the specific developmental or social contexts of the child’s behavior, we cannot assign meaning to any of the pieces of this puzzle. Current theoretical models of psychopathology and self-regulation underscore the importance of developing research paradigms that synthesize biological, behavioral, and social influences. However, most prior research on the regulatory bases of child behavior disorders has been domain-specific. Thus, our first goal was to provide a series of “state of the art” chapters presenting a full spectrum of regulatory processes. In this spirit, each of our contributing authors has examined interactions among regulatory influences that range from genes to cultural factors. We hope that our volume will help stimulate a new phase of thinking about regulatory disturbances in development, one that is marked by thoughtful integrations across different domains, levels, and paradigms.

Including the term “regulatory *processes*” in our title signals our second goal: to address issues in the conceptualization of self-regulation as a dynamic system process. Concepts of regulation are inherently active,

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including both in-the-moment responses to environmental challenges and complex changes in the organization of regulatory behaviors across development. Not surprisingly, however, theory has outpaced empirical research on dynamic processes in development. We hope that our volume will inspire further thinking and research into the nature of self-regulation as a complex system that reorganizes across time in response to changes in the child and in his or her social experiences.

The structure of our volume follows a hierarchical pathway, moving from biological to behavioral and then to social contextual processes thought to influence the development of children's behavior disorders. This organizational structure offers a somewhat artificial guideline, in light of our goal of integrating across various domains and levels of regulatory processes while identifying top-down as well as bidirectional influences.

When navigating challenging terrain, it helps to have a good map. In our introductory chapter, Sameroff provides a set of conceptual guideposts for understanding self-regulation as a complex system of multilevel processes that change dynamically across development. The next four chapters (Chapters 2–5) primarily address the biological foundations of emotion regulation. Suomi conceptualizes emotion regulation as an “emergent property” of early socialization in rhesus monkeys, showing how genetic risk for two patterns of regulatory disorders, excessive fearfulness and impulsive aggression, can be significantly altered by the quality of socialization that infant monkeys experience. Keenan, Jacob, Grace, and Gunthorpe discuss challenges inherent in understanding the nature of poorly regulated responses to stress in human neonates and in linking these responses to individual differences in neuroendocrine function. They illustrate how our definitions of “atypical” responding must be understood as a complex *pattern* of behavior with time-sensitive parameters, such as intensity, duration, rapidity of buildup, and lability, that vary across different contexts of environmental stress, even within the same child. Similarly, Lopez-Duran, Olson, Felt, and Vazquez define emotion regulation as a chain of neurocognitive processes that moderate the activation, intensity, duration, quality, and expression of emotional experience. Focusing on the neuroendocrine foundations of behavioral inhibition in young children, they show how individual differences in stress regulation must be understood in light of co-occurring bio-behavioral processes, specific contextual influences, and development. Calkins also highlights the central role played by physiological arousal in the development of early regulatory competence. Conceptualizing self-regulation as a multilevel construct, she describes how failures in the early regulation of arousal have

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cascading consequences for understanding the later development of attentional, emotional, and behavioral regulatory vulnerabilities that underlie early disruptive behavior problems.

The next three chapters (Chapters 6–8) highlight individual differences in the development of behavior regulation. First, Bates, Goodnight, Fite, and Staples conceptualize behavioral adjustment as the product of an interaction between the child’s temperament traits and salient aspects of family and peer socialization. Following “goodness of fit” models, they show how biologically rooted behavioral traits that propel a child toward extremes of regulatory difficulties, such as impulsive aggression, are amplified by the quality of the child’s relationships with parents and with peers. Next, Olson, Sameroff, Lunkenheimer, and Kerr outline a conceptual model for understanding how early regulatory failures become “translated” into enduring patterns of disruptive behavior. They argue that, to understand the nature of this complex process, we must attend to early failures in self-regulation that place children at elevated risk for psychopathology, how these vulnerabilities transact with qualities of the child’s social experiences, and how child and parent gender moderate these processes. Cole, Hall, and Radzioch then discuss the nature of emotion dysregulation in development, tracing pathways from early emotion dysregulation to severe conduct problems in later life. They argue that severe conduct problems reflect the operation of failures in multiple emotion systems that transact with family-level risks over the course of development.

Social contextual factors that play critical roles in the development of regulatory competence are illuminated in Chapters 9 to 12. Cummings, Papp, and Kouros outline complex transactional processes that lead to emotional distress and behavioral dysregulation in children who experience a potent form of social risk – destructive marital conflict. They show how children’s emotional responses to interpersonal conflict function as regulatory processes that activate maladaptive coping responses, a common pathway to diverse behavior problems. Volling, Kolak, and Bandon argue that the quality of children’s early self-regulation reflects complex family system dynamics that have been ignored in prior research. For example, they illustrate how a toddler’s early regulatory competence is an emergent property of complex family subsystem dynamics, such as the quality of co-parenting or a parent’s differential treatment of siblings. At a broader level of contextual influence, Tardif, Wang, and Olson examine the nature of cultural influences on early emotion regulation. Comparing the development of young children growing up in China and the United States, they

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show how differing cultural preferences of self-regulation can be examined from the consideration of biological, behavioral, and social differences in the expression and regulation of emotion.

Finally, Dahl and Conway discuss common themes that were presented in individual chapters, thereby extending the focus on the regulation of negative emotions to include positive ones as well. Beginning with the many biopsychosocial regulatory challenges that characterize early child development, they go on to describe how analogous integrative challenges occur in other developmental epochs, using adolescence as an example.

This volume grew out of a symposium on regulatory processes in development that was held at the University of Michigan in May 2003. We are indebted to the University of Michigan Office of the Vice President for Research and to the Horace H. Rackham School of Graduate Studies for providing major financial backing of our symposium through their Distinguished Faculty and Graduate Student Seminar program. We are indebted to the National Institute of Mental Health for sharing the cost of this seminar through the mechanism of Arnold Sameroff's Center for Development and Mental Health. We also thank the University of Michigan School of Social Work, Center for Human Growth and Development (CHGD), Department of Psychology, and Committee for Children for their generous assistance. Among the individuals whose assistance has been invaluable, we especially want to acknowledge Linda Anderson, Evelyn Craft-Robinson, and Cindy Overmyer. Last but not least, we thank our authors for their excellent contributions.

Sheryl L. Olson and Arnold J. Sameroff
Ann Arbor

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