

The field is ripe for the kind of synthesis reviews that these chapters provide, bringing together the hottest areas in psychological science. This volume achieves that goal masterfully. The chapters are written by leaders in the field and organize not just what is happening, but also why. Each contribution is readable and helpful, making it a valuable text for students and more advanced scholars alike.

—**Seth Pollak, PhD**, Paughan Bascom Distinguished Professor of Psychology, University of Wisconsin–Madison, Madison, WI, United States

For too long, cognition and emotion were considered as largely separate and unrelated; emotions were considered lowlier (cognition being more exalted) and something to be controlled, regulated, or inhibited. Here, Martha Ann Bell has assembled impressive contributors who elaborate on the rich bidirectional relation between cognitive and emotional development, and how emotions can aid, as well as impair, cognitive performance. Entire chapters are also devoted to the effects of the social environment or context on cognition and emotions, and discussion of biological and neural underpinnings of cognitive and emotional development appears in several of the chapters. This is an excellent, cutting-edge text for people interested in understanding more about cognitive development, emotional development, the diverse ways in which they are related, and the roles of social and biological factors.

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# Introduction

## *Cognition and Emotion as Codeveloping Processes*

Martha Ann Bell

The topic of cognition and emotion in early development is not only critical to the field of child psychology but also an integral part of my own program of research. From my earliest publication on the topic with Christy Wolfe (a commentary in a special issue of *Child Development*; Bell & Wolfe, 2004) to a journal special issue (*Infant Behavior and Development*; Wolfe & Bell, 2023), my research collaborators and I have been enmeshed in this general topic for over 2 decades. We have published multiple empirical articles on the interplay between cognition and emotion (e.g., Meza-Cervera et al., 2023; Wolfe & Bell, 2007) and have been invited to write commentaries and chapters in other volumes (e.g., Bell & Deater-Deckard, 2007; Bell et al., 2019).

Emotion–cognition in early development was a burgeoning topic in the field when Susan Calkins and I proposed our original volume to American Psychological Association in 2006. At that point, there had been a great deal of conceptual work suggesting the integration of emotion and cognition (e.g., Blair, 2002; Posner & Rothbart, 2000) but little empirical data. We lamented the lack of longitudinal information on this integration. Much has changed since the publication of the

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Susan Calkins and I coedited the first edition of *Child Development at the Intersection of Emotion and Cognition*. Collaborating on that volume was part of a 15-year research relationship that produced many empirical reports on cognition, emotion, and cognition–emotion integration from infancy through middle childhood. The writing of this introduction to the second edition was partially supported by Grant R01 MH125800 (multiple principal investigators: Maria Gartstein, Martha Ann Bell, and Nancy A. Jones).

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original edition of this volume of *Child Development at the Intersection of Emotion and Cognition* (Calkins & Bell, 2010). The integration of emotion and cognition is no longer considered novel in the field of child development. There are longitudinal programs of research demonstrating the foundations of this integration during infancy and the manifestation of emotion–cognition integration throughout early childhood. It is time to update the original edition to include these new conceptualizations and new empirical data and keep *Child Development at the Intersection of Emotion and Cognition* at the forefront of this important movement in our field.

## **BASIC DEVELOPMENTAL PROCESSES**

The original edition of this volume was so successful, in terms of citations of individual chapters and the volume as a whole, that it was difficult to consider more than simple updating, and yet, in thinking about the original volume, there are important changes in this second edition that are reflective of how the field has evolved. Both the original and this second edition begin with chapters focused on the topic of *Basic Developmental Processes*. It is essential to specify component processes within cognition and emotion and to do so at a behavioral and biobehavioral level early in development, when differential growth can provide a window on emerging cognition and emotion relations (Blair, 2002). I am extremely pleased that some of the authors from the original edition have contributed updated chapters for this second edition and that there are new contributors who highlight changes in the conceptualization of cognition and emotion in early development.

This section begins with a new chapter by contributors Jessica A. Stern and Tobias Grossmann (Chapter 1). With a focus on neural mechanisms, these authors argue that the social relationships infants and young children require for survival involve the early integration of emotion and cognition.

Margaret A. Fields-Olivieri, Yeunjoo Kim, Kristin J. Jennings, and Pamela M. Cole (Chapter 2) contribute an update of their research from the original edition of this volume. Summarizing empirical evidence from their research team, these authors emphasize young children's use of language for self-regulation and how parental practices help scaffold language use for emotion regulation.

Philip David Zelazo, a contributor to the original volume, with coauthors Isabelle F. Morris, Li Qu, and Amanda C. Kesek (Chapter 3) contribute to this updated edition by reviewing the development of hot and cool executive function. They then turn to their iterative reprocessing model to describe the conscious control of thought and behavior from the interaction of cognitive and affective experiences.

New chapter contributors Claire Hughes and Laura Katus (Chapter 4) also focus on executive function in their chapter. By comparing developmental links between executive function and emotion regulation and the social influences of each, these authors highlight cognition and emotion as predictors of developmental outcomes.

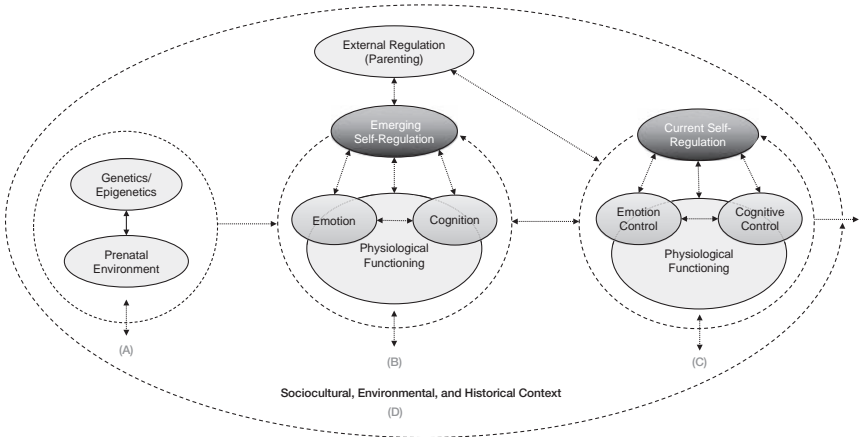
Another new chapter is contributed by Elizabeth L. Davis (Chapter 5), who writes about cognitive reappraisal in childhood. Davis describes the early foundations of this sophisticated cognitive strategy for emotion regulation.

ENVIRONMENTAL AND CONTEXTUAL PROCESSES

The middle section topic in this second edition reflects a shift in focus on how early affective and cognitive processes are conceived. In the original volume, this middle topic was Neuroscientific and Genetic Contributions, because much of the early developmental focus on the interplay between cognition and emotion focused on brain systems associated with attentional processes that are critical to both cognitive and emotion control (e.g., Bell & Calkins, 2012; Bell & Wolfe, 2004; Calkins & Fox, 2002). Since the publication of the original edition, there have been published reviews of empirical research linking early attention processes with both cognitive and affective development (e.g., Reynolds & Romano, 2016) such that the attentional processes and brain networks linking cognition and emotion have moved from the conceptual to the empirical arena.

This second edition has a middle section topic that focuses on Environmental and Contextual Processes. Christy Wolfe and I, along with Anjolie Diaz and Ran Liu, proposed a model about the interplay between cognition and emotion in early development (Bell et al., 2019). As seen in Figure 1, we describe the developmental integration of cognitive and affective processes under the umbrella of self-regulation. In addition to genetic and prenatal foundations, core components include early interactive processes from birth to the beginnings of early childhood supporting the emergence of self-regulation, as well as currently

FIGURE 1. Psychobiological Model of the Development of Self-Regulation Illustrating Cognition and Emotion as Codeveloping Processes



Note. Adapted from “Cognition–Emotion Interactions,” by M. A. Bell, C. D. Wolfe, A. Diaz, and R. Liu, in V. LoBue, K. Perez-Edgar, and K. Buss (Eds.), *Handbook of Emotional Development* (p. 387), 2019, Springer. Copyright 2019 by Springer. Adapted with permission.

observable and measurable self-regulatory abilities in the early childhood period. Importantly, we highlight contextual factors of the environment, such as the family and the broader sociocultural context, as well as the interactive network of these factors across time. The model highlights the dynamics of development from moment to moment and across time. To the far right of the model, the open ellipse and arrow indicate the continuation of these processes throughout development. The middle section, Environmental and Contextual Processes, of this second edition highlights social relationships.

Ross A. Thompson (Chapter 6) contributes an update of his chapter from the original edition. The integration of cognition and emotion is discussed through the lens of attachment theory and internal working models.

Kirby Deater-Deckard, a contributor to the original volume, with coauthors Yelim Hong, Christina Bertrand, and Ann Folker, also focus on family context (Chapter 7). This chapter emphasizes biological–environmental transactions among family members related to executive functioning and effortful control.

Tracy A. Dennis-Tiway, also a contributor to the original edition, is a coauthor with Jennifer L. de Rutte and Abigail Findley in a chapter examining social media (Chapter 8). When the original volume was published in 2010, social media was very much in use, but the impact of social media on developmental outcomes was not yet a major research focus. de Rutte and coauthors focus on affective attention and social attention in their review of links between social media and emotional outcomes.

## **IMPLICATIONS FOR EDUCATION AND CLINICAL RESEARCH**

Both the original and this second edition end with chapters focused on the topic of educational and clinical research, and I am extremely pleased that both of the authors from the original edition have contributed updated chapters for this second edition and that there are chapters from new contributors in this section.

New chapter contributors Louis A. Schmidt, Raha Hassan, Xiaoxue Kong, Taigan L. MacGowan, and Kristie L. Poole (Chapter 9) discuss shyness as an exemplar of the interface of cognition and emotion in human development. These authors focus on fear-related processes and cognitive self-regulation in considering the development of individual differences in shyness.

Claire E. Cameron, Megan McClelland, Jennie Grammer, and Frederick J. Morrison (Chapter 10) update their chapter on self-regulation and academic achievement for this second edition. These authors begin by defining self-regulation as intentional and emergent processes involved in the controlling, directing, and planning of cognition, emotion, and behavior. They then examine self-regulation skills essential for academic development.

A new chapter is contributed by Marisa N. Lytle, Kelley E. Gunther, and Koralý Pérez-Edgar (Chapter 11), who cover behavioral inhibition. With a focus on attention bias, these authors use interoceptive processes to discuss temperament-linked risk for anxiety outcomes.

In the final chapter, Sarah L. Karalunas, Joel T. Nigg, and McKenzie T. Figuracion (Chapter 12) update their contribution on developmental psychopathology. The authors discuss how emotion–cognition interactions may contribute to emotion dysregulation at the clinical level.

As suggested by the brief descriptions of each chapter, there are connections among the contributions in this second edition. For example, executive function is a topic of several chapters, with each providing a different viewpoint of how executive function is involved in the integration of cognition and emotion. Philip David Zelazo, Isabelle F. Morris, Li Qu, and Amanda C. Kesek (Chapter 3) focus on “hot” and “cool” executive functions. Claire Hughes and Laura Katus (Chapter 4) link executive function with emotion regulation. Kirby Deater-Deckard, Yelim Hong, Christina Bertrand, and Ann Folker (Chapter 7) examine intergenerational transmission of executive function and temperamental effortful control.

There are other examples of connections among chapters. The mother–child relationship is a topic of chapters in both the Basic Developmental Processes and the Environmental and Contextual Processes sections of this volume. Ross A. Thompson (Chapter 6) focuses on the attachment relationship and the cognition and emotion processes associated with a child’s internal working model, while Jessica A. Stern and Tobias Grossmann (Chapter 1) examine the social relationships infants and children require for survival. In the Implications for Education and Clinical Research section, Louis A. Schmidt, Raha Hassan, Xiaoxue Kong, Taigan L. MacGowan, and Kristie L. Poole (Chapter 9) discuss cognitive self-regulation processes and shyness, whereas Marisa N. Lytle, Kelley E. Gunther, and Koralý Pérez-Edgar (Chapter 11) examine attentional processes and behavioral inhibition. There are other interconnections throughout this volume. Each chapter author suggests at least one other chapter in this second edition with a conceptual or topical link to their own contribution.

In summary, the chapters in this second edition highlight the foundations of developing relations between emotion and cognition by focusing on basic behavior developmental processes and on environmental and contextual processes influencing emotion and cognition. The focus on both behavioral development and contextual mechanisms of emotion–cognition integration make this volume unique in the developmental literature. Adding to the distinctive content of this second edition volume is the translational research highlighting emotion–cognition impact on academic achievement and mental health. The contributors to this volume are doing exciting and innovative research in the area of early cognition and emotion. It is my hope that this second edition volume, much like the original edition published in 2010, will influence future work in this rapidly developing field of emotion–cognition integration.

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