THE BRAIN DEVELOPMENT REVOLUTION

The science of human development informs our thinking about children and their development. *The Brain Development Revolution* asks how and why brain development has become the major lens for understanding child development, and its consequences. It describes the 1997 *I Am Your Child* campaign that engaged public attention through a sophisticated media communications effort, a White House conference, and other events. It explores the campaign's impact, including voter initiatives to fund early childhood programs and a national campaign for prekindergarten education, but also several missed opportunities. The study examines why brain development compels our attention, why we are – but shouldn't be – neurodeterminists, and the challenges of communicating developmental brain science. This book examines the framing of the brain development story, the selectivity of the messaging, and overpromising the results of early programs. Last, it discusses proposals for how science communication can be improved to better serve children and the public.

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Science, the Media, and Public Policy

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Preface

When I begin teaching a class in human development, I ask my students to list the most important influences that have made them the kind of person they are today. I use their lists as a starting point for describing the range of processes that shape psychological development. The influences that my students identify are revealing of how they have come to understand themselves. Besides the typical nominations of heredity and family, some students identify influential peers, a teacher who made an enduring impression on them, or the culture in which they were born before coming to the United States. For many students, influences early in life are those they report having the most impact, such as care received from a loving grandparent, whereas for others, it is a traumatic experience that has left an enduring impact. Some students describe themselves as the "adult child" of a depressed or alcoholic parent.

The influences my students identify arise from how they reflect on their lives, of course, but there are also other sources of their understanding. Our society familiarizes us with the dynamic between nature and nurture that puts heredity and family close to the top of most students' lists. To those who have grown up in the United States, aphorisms like "as the twig is bent, so grows the tree" cause us to look at early life experiences as especially influential. Science has also affected how my students understand the unfolding of their lives. Current awareness of the physical and mental health consequences of adverse childhood experiences has raised their awareness of how stress and trauma might have affected their development. The students who describe themselves as adult children of some kind of dysfunctional parent are also reflecting the media's attention to studies of the enduring vulnerabilities of growing up in a troubled home. Science, along with culture and personal reflection, is important to how we construct the continuing narrative of our lives.

Science – and the communication of science – is important. On the first day of class, the science that has influenced my students' sense of their lives

has been conveyed to them through the media and other sources. My goal as a professor is to disrupt and expand their understanding of what developmental science has to say about processes of psychological growth. My task is also to correct misconceptions, such as about the immutability of genetic influences on development, or the pervasive egocentrism of young children (or that people use only 10% of their brains, although I wish it were so). By the end of the course, I hope that students not only will have a richer understanding of the influences that have shaped their development but will also be able to apply this understanding to improving children's lives, and will be more thoughtful in their evaluations of what they hear from other sources.

My interest in the communication of science derives not only from teaching but also from my work in public policy. In addition to my research on children's development, I write and consult on issues requiring the thoughtful application of developmental science to inform policy. These include the impact on children of divorce and child custody policies, grandparent visitation rights, child abuse prevention, child mental health, and social-emotional learning in early childhood classrooms. I hope that by bridging knowledge about children's development with these policy areas, more thoughtful policy directions will result, such as encouraging custody arrangements that give children meaningful time with each parent, enabling judges to understand the impact on children of intergenerational conflict, and helping teachers know how to encourage emotional understanding and self-regulation in young children.

Ordinarily, science communication to the public occurs opportunistically when a science journalist learns of a new discovery and draws attention to it in an article, broadcast, blogpost or podcast. Sometimes researchers like me are contacted to provide perspective or analysis. Over time, these stories become part of the knowledge that people enlist when making sense of events, and occasionally the stories are noticed by policymakers (but more likely their staff) because of their relevance to a new policy initiative. This manner of science communication is decentralized, and the accuracy of the stories and issues they profile is entrusted to the science journalists who cover them.

In 1997, however, a national media campaign on early brain development appeared that broke all the rules, and it is the story of this book. The campaign bypassed entirely the ordinary routes of science journalism to present the public with a well-conceived multimedia portrayal of the importance of the early years to lifelong development. It featured celebrities, government officials, and an occasional developmental neuroscientist

or two. The campaign provoked a scientific backlash, a White House conference, an authoritative study by the National Research Council, a voter initiative to fund early childhood programs in California, considerable commentary, the interest of children's toy manufacturers, and the attention of just about everybody. It was in all respects the opposite of what traditional science journalism does, instead resembling a political campaign, and it had immediate and enduring impact on how people thought about early childhood development.

When the campaign exploded into public awareness, I was writing a review of the research on early brain development for the Maternal, Infant, and Child Health Council of South Carolina. From this perch, I wondered about some of the decisions I was observing about the communication of developmental brain science and its applications compared with the scientific literature I was reviewing. Public communication needs to be selective, of course, but it is also strategic. Why focus narrowly on the first three years? Why the emphasis on nurturance rather than nutrition to support healthy brain growth? I also observed the power of brain development to captivate public attention, even though the field of neuroscience was still very young and many central questions were unanswered. Why was the story of early brain growth such a compelling one? In addition to questions about the messaging, I also became interested in the campaign's impact on public policy. From Mozart to prekindergarten to adult workforce productivity, what accounted for the far-reaching applications that were proposed for developmental brain science? In inquiring in these ways, I was fortunate that because of my work, I was invited to participate in many of the events following from the 1997 campaign and witnessed firsthand the continuing impact of what I am calling the brain development revolution.

This revolution in public understanding of early childhood development has had enduring impact on how people think about young children and brain development. It has also influenced many areas of public policy, especially early childhood education and children's health care, while failing to impact other areas equally relevant to the developing brain, such as child care quality and children in poverty. What accounts for these policy wins and losses is also part of my coverage in this book. Finally, as the business model of traditional journalism has eroded and new media have emerged in its place, the strategies of the 1997 campaign have foreshadowed elements of our current media landscape, particularly about how to make issues go viral. The brain development revolution is a story of science, the media, and public policy that is worth telling.

This account was written during the twenty-fifth anniversary of the 1997 campaign. The long gestation afforded the opportunity to observe the extended arc of the brain development revolution, the maturation of the science, and the eventual impact of the public policies it prompted (especially in light of the promises that were made when they began). In the end, I hope this book offers a useful new perspective on a unique and influential public communication effort and an opportunity to raise, and provisionally address, some broader questions about science communication, our understanding of children's development, and how we have come to be the kind of people we are today.

I benefited from the helpful guidance of many people in the preparation of this book. John Love, Patricia Calahan, Linda Jacobson, Rob Grunewald, Susan Bales, and Jack Shonkoff each read chapters and provided invaluable advice and correction – my thanks to each. Interviews with Michael Levine, Ellen Galinsky, Meg Bostrom, and Nina Sazer O'Donnell in the year following the 1997 *I Am Your Child* campaign provided essential information and perspective on the events documented in Chapter 4, as did conversations with Sharon Begley. Sara Watson, currently of Watson Strategies, added to my understanding of the campaign for prekindergarten education from her years as a Senior Officer at the Pew Charitable Trusts. David Michaelski and Adam Siegel of the University of California, Davis, library are wizard reference librarians who helped me locate material that I thought was inaccessible. The work on this book was supported by two sabbatical leaves from the University of California, Davis, that provided invaluable time to think and write. I am also grateful for funding support from the Amini Foundation for the Study of Affects.

As this project has spanned much of my career, I want to gratefully acknowledge some other debts. Michael Lamb, Emeritus Professor of Psychology at the University of Cambridge, whose research on the development of best practices for the forensic interviewing of children about child abuse, has been an inspiring example to me of scientific integrity in the service of children. The late Gary Melton, who directed the Center on Children, Families and the Law at the University of Nebraska when I was Associate Director, taught me much about building bridges between developmental science and public policy, especially when it is informed by an ethical commitment to children. Finally, Michael Wald, Professor of Law Emeritus at Stanford University, is an esteemed law faculty member who has also designed and conducted behavioral research on children and families. During my sabbatical leave at the Stanford Law School,

I benefited from his keen insights about psychology and law, especially the values incorporated into research and its interpretation.

Listed last but certainly first among them all is my gratitude to my wife, Janet, a gifted early childhood educator who has informed my own understanding of children and whose patience with a partner who was more preoccupied than usual while this book was being written is deeply appreciated.

This has been a difficult period for children around the world, who deserve much more from us. This book is dedicated to them, especially those who live in adversity in Ukraine, Afghanistan, Somalia, Sudan, Syria, and other troubled places in the world. Proceeds from the sale of this book are dedicated to their relief.