GREAT MYTHS OF CHILD DEVELOPMENT

Stephen Hupp and Jeremy Jewell

One of the surprise pleasures of busting myths is encountering those that I always thought were true, and so Great Myths of Child Development provided me with a number of such surprises. Identical twins are not genetically identical? A woman can get pregnant during a pregnancy? Not all girls have XX sex chromosomes and not all boys have XY chromosomes? Fathers don't use more corporal punishment than mothers? These, and many more myths, are considered with the best available science, instead of how most of us parents do it by intuition, rumor, and word-of-mouth. This book should be on every parent's nightstand and referenced every time you worry that you might be doing something wrong.

Michael Shermer, Publisher *Skeptic* magazine, monthly columnist
Scientific American, author of *Why People Believe Weird Things*,
The Believing Brain, and *The Moral Arc*

What everyone claims to "know" about child development can be shown to simply not be so. To the rescue comes this book, which can easily be consulted when we are confronted by claims about child development that are accompanied by "authoritative" pronouncements and scientifically weak foundations. I suspect my copy will be well thumbed very soon.

Patrick C. Friman, Ph.D., ABPP, Vice President of Behavioral Health,
Boys Town and Clinical Professor of Pediatrics, UNMC

It's great to see this new addition to the sparse but growing literature on popular misunderstandings of child development. From the entertaining riff on Dr. Spock's advice to the references to entertainment media, *Great Myths of Child Development* is engaging, informative, and much needed. Instructors will be pleased with the "speed busting" sections, which can easily be used as assignments to be modeled on the longer critiques.

Jean Mercer, Professor Emerita, Richard Stockton College, Galloway NJ,
Author of *Child Development: Myths & Misunderstandings*

Authors Hupp and Jewell systematically dissect and destroy 50 myths of child development that are too-often propagated in the popular media and by well-intentioned child-rearing experts. Most importantly, the authors don't just shoot down common misconceptions, they offer concise recommendations and resources to help readers make scientifically-informed child-rearing decisions. As a research-based child psychologist, I hope this book makes it into the hands of all parents, teachers, coaches, and pediatricians.

Brett R. Kuhn, PhD., pediatric psychologist and co-author of *The Toddler Owner's Manual: Operating Instructions, Trouble-shooting Tips, and Advice on System Maintenance*

Great Myths of Psychology

Series Editors

Scott O. Lilienfeld
Steven Jay Lynn

This superb series of books tackles a host of fascinating myths and misconceptions regarding specific domains of psychology, including child development, aging, marriage, brain science, and mental illness, among many others. Each book not only dispels multiple erroneous but widespread psychological beliefs, but provides readers with accurate and up-to-date scientific information to counter them. Written in engaging, upbeat, and user-friendly language, the books in the myths series are replete with scores of intriguing examples drawn from everyday psychology. As a result, readers will emerge from each book entertained and enlightened. These unique volumes will be invaluable additions to the bookshelves of educated laypersons interested in human nature, as well as of students, instructors, researchers, journalists, and mental health professionals of all stripes.

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GREAT MYTHS OF CHILD DEVELOPMENT

Stephen Hupp
and
Jeremy Jewell

WILEY Blackwell

To my folks, who taught me more than I knew they did,
and my kids, who taught me I know less than I thought
I did (S.H.)

To my wife, Kelly, and my daughters, Brea and Chaney.
I'm the luckiest guy in the world to have such
a great family (J.J.)

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PREFACE

An entire book focused on myths related to children might not seem like a critically important topic, until you realize that some of the myths influence lives in profound ways, affecting both physical and psychological health. Many of the myths, for example, get in the way of people receiving effective psychological treatments. Other myths cause people to feel guilty, judge others, or waste money. When we become more aware of what research has to say about important topics in child development, we are more likely to make decisions that promote a healthier lifestyle in children and the adults in their lives. Our book follows in the tradition of *Great Myths of Popular Psychology* [1] by: (i) debunking commonly believed myths; (ii) uncovering *why* people believe these myths; and (iii) discussing research-supported practices.

Our book was written with two primary target audiences in mind. First, we wrote this book for parents that often get conflicting advice from family, friends, professionals, and celebrities. Both of us are parents, and like a lot of people we believed many of these myths throughout much of our lives. We considered having this subtitle to the book: "What Every Parent Needs to NOT Know." Second, this book is also intended to be a text in a college classroom. For example, it could be used as a supplemental book in an undergraduate child development course, or in upper level undergraduate and graduate courses related to child psychology. We also considered this subtitle: "What Every Student Needs to NOT Study." Others that might find this book useful include teachers, policy makers, and other people with inquisitive minds.

With the college classroom in mind, we organized this book in a manner consistent with typical child development courses. Although some college courses cover the material chronologically (e.g., first conception, then infancy, then early childhood, then older children), many other courses cover their material topically (e.g., beginnings, physical growth,

cognitive development, emotional development, etc.). We developed our book with a topically organized classroom as a guide.

Specifically, all of the Child Psychology courses at our university use Robert Kail's textbook [2], and our chapters follow a complementary order. In fact, most topically organized textbooks follow a very similar order as Kail's book, so our book should work pretty well with most topical child development texts. For example, our opening myth focuses on twin telepathy that originates in the womb, and child development textbooks often include the topic of twin research in the first chapter. Similarly, all of our early chapters focus on conception, pregnancy, or newborns, which are also usually covered in the first chapters of textbooks.

The second section, "Growth, Body, & Mind" corresponds with textbook chapters covering growth, motor development, cognitive development, and language. The third section "Emotions & Behavior" corresponds with textbook chapters that cover emotional development and behavioral issues. Finally, the fourth section, "Social Environment," corresponds with chapters related to the family and influences outside of the family.

Like many universities, our university has separate Child Development and Adolescent Development courses. Because of this, the topics in our book are derived from topics in a Child Development course, rather than an Adolescent Development course. Although there are many great myths of adolescent development, we tended to veer away from those topics (e.g., sex, drugs, and rock 'n' roll). Thus, there is still a great need for a book entitled something like *Great Myths of Adolescent Development.*

We have a lot of people that we'd like to thank for helping make this book happen. First, we are very appreciative of Scott O. Lilienfeld and Steven Jay Lynn (the series editors) for creating this series and for giving us the opportunity to contribute to it. With great enthusiasm we read *50 Great Myths of Popular Psychology* [1] soon after its publication, and we are very proud to be a part of its tradition. Over the past two years, Scott and Steve have also provided immensely valuable advice and feedback covering big issues (e.g., which myths to include) to small issues (e.g., where to place punctuation marks) and everything in between (e.g., how to effectively communicate our message). We'd also like to thank our editors at Wiley-Blackwell. Specifically, Matthew Bennett worked with us to get the project started, and Danielle Descoteaux has enthusiastically supported the project through its completion. We are also grateful to several colleagues, friends, family members, and students who contributed ideas and gave us feedback on many of the chapters. One especially notable research assistant is Catrina Salama who conducted a great deal of research for this book.

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INTRODUCTION

For several decades, Dr. Benjamin Spock [1], a pediatrician and author, calmed parents with his mantra, "You know more than you think you do" (p. 3), and we agree that this is a good message to send to parents. Parents get a lot of advice from family, friends, the media, and, of course, parenting experts. Dr. Spock warned that advice from others can be contradictory when he wrote, "You hear that a baby must be handled as little as possible, and that a baby must be cuddled plenty; that spinach is the most valuable vegetable, that spinach is a worthless vegetable; that fairy tales make children nervous, and that fairy tales are a wholesome outlet" (p. 3). And now, decades later, parents continue to hear mixed messages like these and more.

With contradictory advice from different sources in mind, Spock's reassurance that parents already know a lot on their own is helpful because parents can usually figure parenting out without any specialized training, baby workshops, or parenting courses. In fact, sometimes "expert advice" can actually steer parents in the wrong direction, and at times parents would be better off making decisions for themselves instead of listening to others. Parents are exposed to countless claims about what is best for a fetus, infant, or child. Some of these claims have research support; some of the claims have never been researched; and some of the claims have research that shows they're wrong.

When professionals make confident claims that are not supported by research, we call these claims "myths." In addition to Spock, some of the advice-givers that have propagated myths of child development include Sigmund Freud, William Sears, James Dobson, and Laura Schlessinger. We'll address some of their advice, and the advice of many

other parenting gurus. But to be fair, everyone, including us, has believed in some myths at some time. In fact, we believed many of the Great Myths uncovered in this book until we started delving into the research. Some of our favorite myths are the myths that we believed until recently. Thus, while we agree with Spock's reassuring words at the beginning of this Introduction, there is another (slightly modified) mantra that will be the focus of our book: You know more *myths* than you think you do.

Our book will do more than just explore claims from the experts, like Dr. Spock. We're also interested in the other Spock, the one from the Starship Enterprise, who lives a few centuries in the future. In one episode of the original *Star Trek* series [2], Mr. Spock hears the doctor from his ship using "baby talk" with an infant on another planet. He's baffled, as this is clearly not the normative way for adult Vulcans to interact with little baby Vulcans. Does baby talk hurt or help language development? This is an important question, but it's also important to ask how television shows, like this example from *Star Trek*, might help shape our beliefs.

Some other examples from television shows that we'll relate to the myths in this book include: *Modern Family*, *The Office*, *Seinfeld*, *Cake Boss*, *The Simpsons*, *Beavis and Butthead*, *America's Got Talent*, *Mad Men*, *Glee*, *Moonshiners*, *Game of Thrones*, and *Duck Dynasty*. If you prefer movies, we have examples from: *Frozen*, *Meet the Fockers*, *Little Fockers*, *American Psycho*, *The Sixth Sense*, *Sex and the City*, and *Cheech and Chong's The Corsican Brothers*. We'll also share examples from celebrities such as: Kourtney Kardashian, John Travolta, Salma Hayek, Neil Patrick Harris, Jenny McCarthy, Bill Engvall, and Rembrandt (yes, the artist). If you're more of a reader, we have examples from *The Dark Tower* Series and *Care Bears*. Okay, we admit it, we don't reference a lot of literary fiction, but hopefully you were excited about our amazing listing of television shows, movies, and celebrities!

Beyond parenting experts and the media shaping our beliefs, we often come to our own conclusions based on what seems like common sense. Unfortunately, common sense is often misdirected. In the Introduction of their book, Lilienfeld and colleagues [3] indicate that one of their goals "is to encourage you to mistrust your common sense when evaluating psychological claims" (p. 6). Why is common sense often wrong? Lilienfeld et al. offer "The 10 Sources of Psychological Myths" (p. 9) which can help explain common errors that contribute to believing in myths. Luckily, once you have a firm grasp of the sources of myths, your immunity to myths will be strengthened.

Sources of psychological myths

We're all prone to making the errors in thinking that are represented by the different sources of myths. We will cover each of the Lilienfeld et al. sources of psychological myths briefly [3].

1. *Word-of-Mouth*. We tend to believe information that we have heard repeatedly or that sounds catchy. For example, we have all heard the catchy description of the "terrible twos," but the age of 2 years old doesn't have to be so terrible.
2. *Desire for Easy Answers and Quick Fixes*. It's human nature to seek the greatest rewards for the least amount of effort, and this leads us to want to believe that many problems have easy solutions. For example, it would sure be nice if we could sit our infants in front of videos that would make them smarter, but videos have no such effect on intelligence.
3. *Selective Perception and Memory*. Once we hear a claim, we often begin to see (and then remember) all of the times the claim is supported, while we also ignore (or forget) all of the times the claim is not supported. For example, we tend to remember the times when identical twins had a mysterious pain at the same time, but we don't tend to notice the thousands of times when one twin gets hurt and the other is just fine.
4. *Inferring Causation from Correlation*. We often believe that one variable causes another variable just because the two variables tend to occur together. For example, over the past few decades, children have been receiving an increasing number of vaccines. At the same time, children are being diagnosed with an Autism Spectrum Disorder at increasing rates. Additionally, over the last decade Miley Cyrus has been getting more popular. That is, Miley Cyrus's popularity is correlated with increased rates of autism. Why do vaccines get blamed for autism but Miley Cyrus gets away scot-free?
5. *Post Hoc, Ergo Propter Hoc Reasoning*. This is Latin for "after this, therefore because of this," and it means that when one event happens before the other event, we tend to believe that the first event caused the second event. For example, couples sometimes get pregnant soon after adopting a child; however, this doesn't mean that the adoption *caused* the pregnancy.
6. *Exposure to a Biased Sample*. We have a tendency to believe that the few people we see from one group represent all of the people from that group. For example, when daycare teachers are featured in the news, it's usually because of something negative that happened. This might lead one to believe that a large number of daycare teachers are

problematic, when in fact the far majority of daycare teachers do countless great things for children that rarely make the news.

7. *Reasoning by Representativeness*. When we see that two things are similar in some way, we tend to think that the similarity gives the two things a meaningful connection. For example, boys like sports such as basketball, and girls are sweet like watermelons; thus, some people incorrectly assume that a pregnant belly shaped like one of these objects could represent the sex of the fetus (we agree that this is a sexist comparison, and we didn't make it up).

8. *Misleading Film and Media Portrayals*. When the media portrays psychological phenomena, they tend to sensationalize the phenomena, which we then assume to be accurate depictions. For example, television shows and movies love to show how hyperactive children can become after they've consumed some sugar. Calm children rarely make great television!

9. *Exaggeration of a Kernel of Truth*. We tend to accept little facts as evidence for broader, more complicated, claims. For example, there are several benefits to breastfeeding an infant for about a year, but some have claimed that there are benefits to breastfeeding for five, six, or seven years, even though there's no research to support this claim.

10. *Terminological Confusion*. We often accept terms at face value even though the terms themselves may be misrepresentative. For example, the term "identical twins" suggests that they have exactly the same (i.e., "identical") genes. However, if you read ahead to one of the Speed Busting myths, you'll see that this term can be deceptive.

Definition of a "Great Myth"

This book includes 50 "Great Myths," and we had to choose these myths from hundreds of possibilities. As part of this decision-making process we felt the need to define what it means to be one of the Great Myths of child development. Here are our seven criteria for the definition of a Great Myth:

1   A lot of people have already *heard of* the myth.
2. A lot of people currently *believe* the myth.
3. When the myth is heard for the first time, it "rings true" and is believable.
4. The myth is espoused by many professionals (or pseudo-professionals).
5. There is compelling contradictory evidence against the myth.
6. Belief in the myth can, in at least some cases, be harmful.
7. The myth discourages use of an available evidence-based practice.

Other factors that influenced myth selection were based on the desire to cover myths that are: (i) on a wide range of topics (e.g., walking, talking, and balking); (ii) across different age groups (e.g., fetuses, babies, and children); (iii) focused primarily on children (as opposed to adolescents or adults); and (iv) unique to this book (as opposed to myths covered in Lilienfeld et al.'s original book).

In our book, we focus the greatest attention on the 22 myths that were the most reflective of the Great Myth definition described above. In addition to these myths, we also review another 28 myths during a few sections dedicated to "speed busting," for a grand total of 50 myths. Myths were placed in the Speed Busting sections because they ranked lower based on our definition of Great Myths; however, we still felt these myths were important enough to warrant some discussion herein.

Park [4] describes another valuable way of thinking about myths with his categories of questionable claims in his book, *Voodoo Science: The Road from Foolishness to Fraud*. First, *pathological science* occurs when well-meaning scientists conduct research and actually fool themselves because of inherent problems with their research design. Second, *junk science* occurs when theorists deliberately make arguments without research. Third, *pseudoscience* occurs when practitioners purposefully make their unsupported claims sound scientific because they believe them to be true. Finally, *fraudulent science* occurs when poorly done research is purposefully exploited in order to make a quick buck. As you can see, Park's categorizations of voodoo science all focus on different ways that professionals (or people acting like professionals) spread misinformation, whether it's accidental or intentional. In a similar vein, one could also consider different categories of myths to be: pathological myths, junk myths, pseudoscientific myths, or fraudulent myths.

Admittedly, we believe that we need to be careful about using words like "pseudoscience" or "myth." For example, a claim of space aliens visiting earth is a myth inasmuch as there is currently no credible evidence that it has happened, but it's very hard to "prove" a negative. Little green men could potentially visit us one day; thus, something that is a myth now could become a reality at some point in the future (don't get your hopes up for space aliens, though). It's also important to be careful about using terms like "proof" or "truth" because our state of knowledge is continually growing and evolving.

What you need to know: Evidence-based practice and resources

There are a lot of myths that we'd all be better off not believing. By its very nature, then, our book is mostly focused on what you need *not* know (although, we think it's important for you to know what you shouldn't know).

Nevertheless, we wanted to spend some time writing about what many parents and students actually may want to know about child development. The last criterion in our operational definition of a Great Myth was that "The myth discourages use of an available evidence-based practice." This raises the question: Are there evidence-based practices in child development?

Psychologist and best-selling author, John Rosemond [5], wrote recently that "the efficacy of no form of child therapy – not one! – has ever been demonstrated in controlled studies" (p. 47). He wrote this statement in a book, like ours, in which he was debunking several myths of child psychology. A lot of his book is pretty good, but Rosemond helps us illustrate the difference between skepticism and cynicism. Rosemond takes a cynical outlook regarding his (and our) profession of clinical child psychology. Skepticism requires evidence. Cynicism accepts no evidence. Indeed, there is plenty of evidence to suggest that there are many different types of evidence-based practices in clinical child psychology.

One common thread across most of the chapters in our book will be that of evidence-based practice. For example, a task force from the American Psychological Association has developed criteria for different therapeutic approaches to be classified as "well-established" or "probably efficacious" based on the quantity and quality of research studies examining their efficacy [6]. This task force summarized hundreds (if not thousands) of well-controlled studies involving psychosocial treatments for children. We point interested readers to www.effectivechildtherapy.com, a website sponsored by the Society of Clinical Child and Adolescent Psychology. This website provides useful links to information about research-supported treatments for common challenges of childhood.

We can understand some level of discouragement about the current practice of child therapy. A lot of myths are out there. Luckily, there are plenty of truths to be discovered, too. Many people have worked hard to be able to distinguish between the Great Myths of psychology and the science of psychology. As Carl Sagan [7] wrote, "Each field of science has its own complement of pseudoscience" (p. 43). Indeed, myths are not unique to psychology. Sagan, though, was a skeptic, not a cynic. The title of his book, *The Demon-Haunted World: Science as a Candle in the Dark* (1996), evokes the optimistic view that the best answer for the darkness of pseudoscience is the light of science.

Throughout our book, in addition to sharing research that debunks the Great Myths of child development, we will also share information regarding evidence-based practices in child development. At the end of most of the chapters, we include a brief section called "What You Need to Know," in which we share research, websites, and books that may be

helpful to parents and students of child development. We selected resources based on evidence-based practices, and many times the same clinicians who conducted the research also wrote the books.

We view our book as a way for parents and students to develop a critical eye for finding valuable information. That is, our book is a resource for finding self-help books and other resources that are based on research. In this way, we hope parents (and future parents) will be able to use our book as a *meta-self-help* book. That is, traditional self-help books go into great detail on one topic, whereas our meta-self-help book surveys a very broad range of topics and refers readers to traditional (research-based) self-help books. Hopefully, in this way, our book can help illuminate many of the existing candles in the dark.

Our research

Although we sometimes easily found opinion polls related to the myths in our book, other times the polls were elusive. Because of this challenge we decided to conduct our own research to survey beliefs about the myths of child development. In each chapter we refer to "our research" [8], and we will describe our research here so that we don't need to provide the details in each chapter. We first developed a questionnaire called the *Opinions About Kids Scale (OAKS)*. This survey includes 26 statements that we consider to be myths (e.g., "Baby walkers help young children learn to walk"). The myths are interspersed with 26 statements considered to be supported by research (e.g., "The vision of most babies is worse than the vision of most adults"). Respondents had four options in their rating of each statement. They could "agree," "somewhat agree," "somewhat disagree," or "disagree." For ease in interpretation, "agree" responses and "somewhat agree" responses were combined to represent people that agreed (at least to some degree) with the statement.

We then gave the survey to two groups of people. First, we administered the survey to 163 undergraduate students on the first day of their course in Child Psychology at a mid-sized university in the Midwest. Their participation in the research was voluntary, confidential, and not tied to their course grade. Second, we administered the survey to 205 parents across America by using a survey via the Internet.

Our results revealed that undergraduate students and parents responded in very similar ways. For example, 78% of college students reported that they agreed with the myth that "Baby walkers help young children learn to walk." Similarly, 76% of parents agreed with this myth. By comparison, we'll also share the results of the beliefs about one of the evidence-based

statements. Specifically, 52% of students and 66% of parents agreed with the evidence-based statement that "The vision of most babies is worse than the vision of most adults." Thus, the participants actually believed in the myth more than the evidence-based statement! We'll continue to share similar results about the myths throughout the book.

A final word before you continue

We're going to spend a lot of time disagreeing with a lot of smart people, and we worked hard to avoid making statements that other skeptics could debunk in the future. We realize, however, that a few errors on our part seem inevitable. Because we hope to encourage your skeptical thinking about child development, it's only fair that you read our work with a healthy degree of skepticism (but not cynicism). Feel free to look for errors in our arguments or research, and send us tweets with other myths, pop culture examples, or research studies that we should have added. Your input could help shape any future editions of this book. We look forward to hearing from you via Twitter: @StephenHupp and @DoctorJewell. Also, you can find other related information on our websites: www.stephenhupp.com and www.doctorjewell.com.

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