Foreword by Gary Klein,
Author of *Sources of Power & Snapshots of the Mind*

DARWIN'S PEOPLE

How Naturalists Explain Our Behavior

BRIAN MOON

First American Edition

Published in the United States by

Perigean Press, a division of Perigean Technologies LLC

Spotsylvania, Virginia, USA

www.perigeantechnologies.com

ISBN: 979-8-9930178-9-1

Cover Design by Megan Leavens

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FOREWORD

Tighten your seat belts. This is going to be an exciting ride. Brian is going to whip you through topics ranging from neuropsychology to religious cults to violent murderers to outstanding teachers. You'll be pondering the philosophy of science one minute and the nuances of field hockey the next. And Brian has tied all of these issues together into a complex, multidimensional framework.

This book is truly a tour de force as you will travel through Brian's mind, and also through his own journey, tracing the big picture while at the same time savoring specific cases and stories that will stay with you long after you finish reading.

You will encounter a number of heroes—the philosopher Karl Popper being the star of the show. One primary theme of the book is about naturalism: doing naturalistic research on how people think and behave, and using a naturalistic perspective to try to explain their actions. Naturalism focuses on the phenomenon more than the methodology. Making discoveries about the phenomenon is more important than adhering so rigidly to methodology that you shut off opportunities to make discoveries.

Brian broadens the naturalistic perspective in unique and creative ways, linking it to other traditions so that even people already doing naturalistic research will come away with a different and richer appreciation of their work. Brian shows how much of the naturalistic perspective can be traced back to Popper's ideas.

Another primary theme is expertise—how it develops, and how to manage it.

And yet another theme is the importance of cases: actual, situated, context-embedded cases. For example, Brian describes the work of the sociologist Lonnie Athens on violence to illustrate what motivates people to commit violent acts.

Athens formulated his views based on interviews with convicted criminals, murderers and rapists and the like, tracing their life histories. Then Brian pivots to field hockey, drawing on his own experiences observing girls' field hockey teams and the processes that motivated some of the athletes to become more serious and dedicated. Two very different examples but with a common theme of understanding the way motivation plays out in a specific context with specific people.

The book also has its share of villains, and it will certainly make many readers angry. That's because Brian rejects so much of the cognitive science paradigm. This is not going to be a popular book. Quite the reverse.

But Brian is not simply looking to make waves or be a contrarian. He is deadly serious, and is on a mission. He shows how the traditional, laboratory-bound research paradigms are giving us a distorted and impoverished view of cognition. Even worse, they are making very little progress. So it is high time for a change. And Brian is offering us an off-ramp from all of that unproductive experimentation. He is offering us an exciting alternative.

The laboratory studies of decision making and cognition tend to be highly structured, tightly controlled, and extremely rigorous, and that rigor often gets in the way of making discoveries. You can think of it as rigor mortis. Yet, the laboratory researchers don't see the problem. They sense that they aren't getting very far but their reaction is to double down on the rigor, rather than stepping back and re-examining what's going wrong.

Here is an analog. Almost a century ago, America was captured by the behaviorist tradition. It was verboten to speculate about "thinking"— far too messy and unscientific. Instead, the researchers explored different ways to observe and measure behavior, in order to formulate laws of behavior. The Hull-Spence tradition was dominant, aligned with the rigors of B.F. Skinner. The researchers studied, not people, but animals. Primarily rats. Sometimes, for variation, pigeons. Mostly rats in Skinner boxes performing the illuminating task of pressing a

bar to get food or to avoid shock. (The pigeons would have to peck at a button.) After far too long, with too little to show, the behaviorists realized they had to change course. The new course was to double down. Rats pressing a bar — that was simply not rigorous enough. You had to look at what they called micro-molar behavior. Which paw was the rat using? Researchers had to become more detailed. To my untrained eye, the rats were not behaving like robots with action sequences getting strengthened. They had figured out that all that mattered was pressing the lousy bar in order to get the food pellet. They would have pressed the bar with their noses if you immobilized their paws. In some ways, the rats seemed smarter than the researchers. I am not making this up. I am not smart enough to make up things like this. I lived through that era, in graduate school. Fortunately as an observer and not as a behaviorist researcher.

(Another example: in the rat lab my late wife Helen worked in when she was a graduate student, the task was pressing the bar to avoid shock. A light would come on a few seconds before the electric shock was delivered to the grid at the bottom of the Skinner box, and the rat had to press the bar to avoid the shock. They learned how to do this. One day, the apparatus was malfunctioning. The professor set about repairing it, using a screwdriver to tighten the connections. The problem was that the apparatus was still turned on, delivering a shock to the professor again and again. The strange part was that the light kept coming on, signaling the imminent shock. But the professor never learned to press the bar to avoid getting shocked. So who was smarter—the prof or the rat?)

At any rate, this is what comes to mind when I see the current-day laboratory researchers doubling down on precision and rigor rather than re-examining the whole approach.

Let's take the example of violence, and an observation Brian includes in this book. Steven Pinker has written a highly praised and very popular 2011 book *The Better Angels of Our Nature: Why Violence Has Declined*. Yet Lonnie Athens has provided another account of violence, based on his jailhouse interviews

with violent criminals. To me, the Athens account is much richer than what Pinker has offered. Pinker, however, never cites Athens' work. To make matters worse, Pinker was aware of this work. When asked why he didn't cite Athens' account, Pinker explained that Athens' sample size was too small. What? What kind of reason is that? Athens was putting himself at risk by conducting these face-to-face interviews with convicted murderers and other dangerous felons, in their jail cells, and yet to Pinker the work didn't pass muster because it stacked up poorly with a research paradigm gathering statistical power by running large numbers of participants, often using survey questions. Pinker's dismissal illustrates the insularity of so many in the scientific community.

Brian has given us the opportunity to examine the limitations of the approach of doing research on thinking in a non-naturalistic setting, a rigorous setting with tightly limited tasks that don't matter to the naïve college students who are the current-day analogs to lab rats. In this book, Brian has offered a fresh perspective—a challenging and controversial perspective.

His perspective even challenges me. I have misgivings about a number of Brian's claims, and even about his overall framework. I am strongly endorsing this book but I am not endorsing all the ideas presented in the book. I admire much about the work of Karl Popper but I do not align myself with his views the way that Brian does. When I read Brian's book I found myself noting caveats throughout.

Nevertheless, you do not have to adopt Brian's perspective in order to get value from the book. I encourage readers to adopt a mindset of being alert for ideas that excite you and that can improve your work, a mindset of appreciative inquiry, instead of a skeptical mindset of tracking the ways you might disagree with Brian.

I think this is an important and valuable work because of the way it highlights issues of naturalistic research and issues of managing expertise. It is important because it illustrates how to arrive at a grand synthesis between different disciplines. I

admire the breadth of Brian's vision and the creative way he has blended all the different facets he has covered, and I hope this book will serve as an inspiration for other researchers to expand their views beyond their immediate investigations, and to speculate on a broader scale. I hope this book will encourage cognitive scientists to focus more on the phenomena of interest and break free of the shackles of excessive methodological rigor.

Finally, I want to describe my own relationship with Brian Moon. We have known each other for more than a quarter of a century, as Brian explains in this book, starting when Brian accepted a job at my company, Klein Associates. We have remained friends even after I sold my company and Brian started his own company, Perigean Technologies LLC. In 1989 Judith Orasanu (at the Army Research Institute) and I hosted the very first Naturalistic Decision Making conference, starting a tradition that has endured, with meetings roughly every two years. As I write this Foreword, preparations are underway for the NDM-18 meeting in June 2026. Brian Moon took over the leadership of the NDM community a few years ago. He set up the Naturalistic Decision Making Association and is the Executive Director. (Laura Militello, Julie Gore and I are on the advisory board.) The NDM Association currently has more than 400 members worldwide. We are grateful to Brian for all that he has done to promote the NDM tradition.

This book should be taken, not as a manual of what to think, but as a guide to how to think—how to think and act as a naturalist in exploring and discovering the ways we adapt to complex situations.

GARY KLEIN

Boston, Massachusetts
August 2025

PREFACE

I once had a project with a consumer packaged goods (CPG) company. These companies make the products you buy frequently for yourself, your family, pets, home, and the workplace. I knew this company's products well, and so would you if I told you. Their advertisements, while sometimes a bit over the top, are true in one sense: they are part of our lives. They quite literally sustain many of us.

The project was about helping the company retain some of its most valuable resources: the knowledge that its experts knew. My job was to help their experts articulate the tacit knowledge they used every day that enables the company to succeed. Deep, technical and social knowledge that wasn't captured in documents, protocols, or systems. Hard-earned routines that go mostly unnoticed by their colleagues because they were just part of the way things got done. That sort of thing. I call this practice "*expertise* management"; if a company is going to spend resources on knowledge management, they might as well focus them on the most important knowledge they have.

One expert I worked with had deep technical knowledge about a manufacturing technique called extrusion. You've used the same process if you've ever played with Play-Doh®. The process revolves around a piece of equipment that, when properly configured, can produce a wide range of products. CPG companies use it to make variants of products that start from essentially the same set of ingredients. The trade secrets lie in configuring the screws inside the tube that push, pull, mix, knead, bake and shape the dough, in adding both wet and dry ingredients along the way, and in other clever steps, to produce an original product on massive scale. It was all quite fascinating. I'd never really thought much about how the products I use at home were created. All of these different companies mixing and varying to produce the sustenance of my life and features of my lifestyle.

I'd been working with this expert for a few weeks before we had occasion to walk the plant floor. I saw what I expected—workers, extruders and their parts, ingredients, post-processing conveyers, packaging. But when we got to the warehouse, something didn't add up. My assumption had been that the company makes their products and ships them off to a retailer, where I buy them. And that is indeed what happens. But off to the side sat a bunch of palettes with another company's brand markings. Not a direct competitor, but a retailer's brand. I asked the expert what that was all about. The response: "We make all of their products, too. But they aren't as good as ours." A downward tweak to the ingredients, formula, and/or processing, and voilà—another product, sold under a different label, competing with the rest of their products, sometimes under the same roof.

I took two lessons from this story. One is that extraordinary variety can come from the same basic process. The other is that the *appearance* of variety can be illusory.

This book is about both lessons. I hope by reading it you come away with a deeper appreciation of the first, but more importantly remember the second the next time someone explains people and their behavior *at* you.

BRIAN MOON

Spotsylvania, Virginia
August 2025

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Darwin's People:
How Naturalists Explain Our Behavior

For too long, the dominant explanations about human behavior have neglected to include the most important piece: people. Explainers have tried to account for how and why people do what they do without actually investigating people where they work, play, fight, and love. Their explanations, and the solutions they base on them, fail us in spectacular ways.

Working within the tradition of Charles Darwin, naturalists have sought to understand how humans became human and people become people -- proficient people at that. They've created compelling explanations that offer genuine, scientific insight. This book is about them, their explanations, and their methods for building a better tomorrow. Weaving together modern naturalistic accounts from biology, the social sciences, and philosophy – in the context of people's actual behavior in their worlds – Darwin's People recenters the discussion of us back onto us.

I am reminded of *Zen and the Art of Motorcycle Maintenance*. It moves between a life story and matters philosophical.

- **Robert Hoffman**, Emeritus Scientist,
Institute for Human & Machine Cognition

A tour de force... This is not going to be a popular book. Quite the reverse. But Brian is not simply looking to make waves or be a contrarian. He is deadly serious, and is on a mission.

- **Gary Klein**, Chief Scientist, ShadowBox LLC

Brian Moon

Brian is the Chief Technology Officer of Perigean Technologies, and Executive Director of the Naturalistic Decision Making Association.

$14.99
ISBN 979-8-9930178-9-1
51499>
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