Why does anything happen? What is the best account of natural necessity? In this book, William A. Bauer presents and defends a comprehensive account of the internal structure of causal powers that incorporates physical intentionality and information. Bauer explores new lines of thought concerning the theory of pure powers (powerful properties devoid of any qualitative nature), the place of mind in the physical world, and the role of information in explaining fundamental processes. He raises probing questions about physical modality and fundamental properties, and explores the possibility that physical reality and the mind are unified through intentionality. His book will be valuable for researchers and students working in metaphysics, philosophy of science, and philosophy of mind.

William A. Bauer is Associate Teaching Professor in the Department of Philosophy and Religious Studies at North Carolina State University. He has published articles in journals including Acta Analytica, Erkenntnis, and Science and Engineering Ethics.
CAUSAL POWERS AND THE INTENTIONALITY CONTINUUM

WILLIAM A. BAUER

North Carolina State University
In the series of things, those that follow are always aptly fitted to those that have gone before; for this series is not like a mere enumeration of disjointed things, which has only a necessary sequence, but it is a rational connection: and as all existing things are arranged together harmoniously, so the things that come into existence exhibit no mere succession but a certain wonderful relationship.

Marcus Aurelius, Meditations IV, 45
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Preface

Two electrons repel each other, thus displaying their charge. A particle responds to a gravitational field. Why do these entities behave as they do? Across space and time, why do any events happen? Science answers questions about what happens and how it happens. The metaphysics of science, however, answers questions about why it happens. That is what this book is about. Specifically, it argues that things happen because causal powers are at work. Causal powers – including fundamental powers such as charge and mass as well as nonfundamental powers like flammability – are modal properties that carry information for various manifestations. The causal powers of particles and other objects explain why things happen.

Take a step back. Should natural properties be understood as powers, qualities, or as simultaneously powerful and qualitative? The roots of this question spread throughout the history of philosophy, and in recent decades it and related questions have become central to the metaphysics of science. I defend the powers view of properties, specifically that properties are pure powers devoid of any qualitative nature.

If causal powers have no qualitative nature, then what are they like? Accounts of powers’ nature and identity often focus on their relationship to other powers. Such networking accounts of powers focus on powers from the outside. Although they are not wrong, they are incomplete because they leave the inside nature of powers – the nodes in the network – underexplored and mysterious. After arguing for an ontology of pure powers, I argue that two metaphysical theses conjointly yield an informative and plausible nodal account of powers. The first is the Physical Intentionality Thesis (that powers are intentional, or have directedness, just as mental states are intentional) and the second is the Informational Thesis (that powers carry information for their potential manifestations). Together these theses undergird my account of powers from the inside, the 3d account: powers (dispositions) possess physical intentionality (directedness) and carry information (data) for various manifestations.
Preface

The 3d account has a number of significant implications, one of which is that nature possesses an intentionality continuum. Given that everything is physical and physical intentionality is real, intentionality runs throughout nature, from the smallest particles up through complex organisms with conscious minds. But fundamental intentionality, found in the causal powers of the smallest particles, is not conscious intentionality. This is not panpsychism, but a kind of panintentionality, where everything with causal powers possesses an important precursor to full, conscious mind.
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It should go without saying that, despite the help I have received, all mistakes are mine.
Abbreviations

PIT The Physical Intentionality Thesis
IT The Informational Thesis