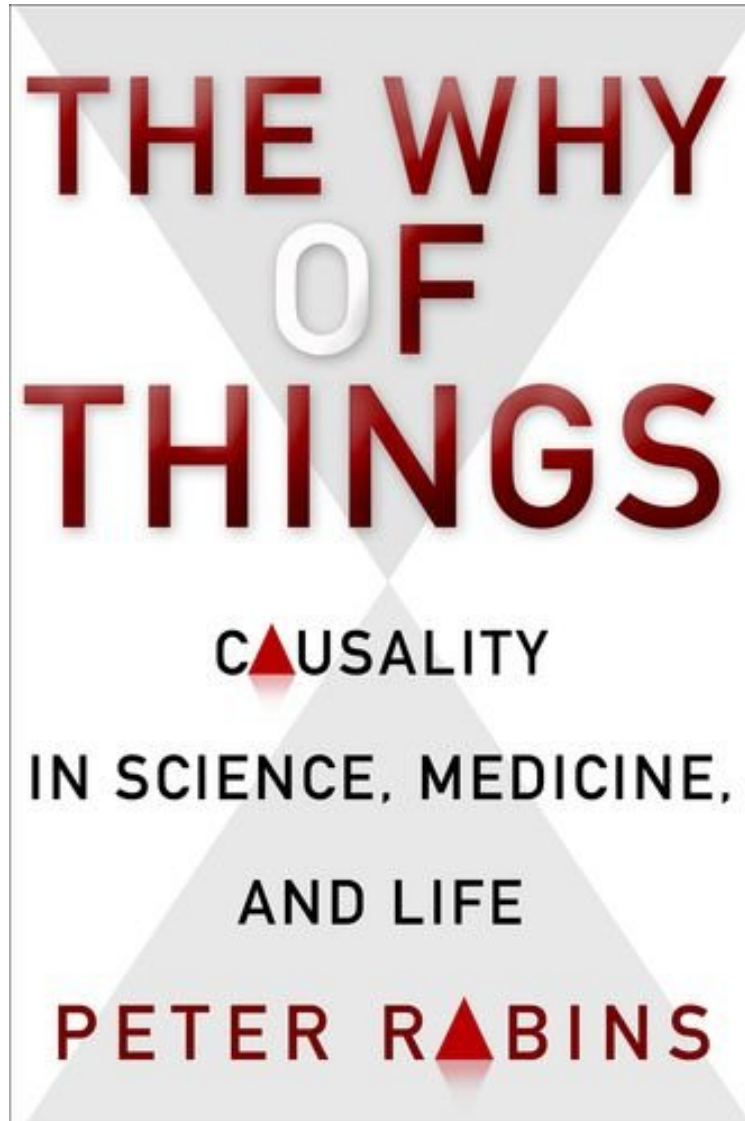


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The Why of Things: Causality in Science, Medicine, and Life

Peter Rabins

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Peter Rabins : The Why of Things: Causality in Science, Medicine, and Life before purchasing it in order to gage whether or not it would be worth my time, and all praised The Why of Things: Causality in Science, Medicine, and Life:

0 of 0 people found the following review helpful. Complexity of CausalityBy Gerald McLaughlinDr. Rabbis surveys the history and current status of causality with attention to the emerging models of complex diseases and the search for more effective prevention and treatment strategies. Blinded randomized clinical trials, the currently accepted standard, are given an interesting summary and historical treatment, as are a model of predisposing precipitating etc and

narrative approaches to identify probabilistic causality within the biomedical enterprise. Unfortunately the possibility of more effectively integrating these is a missed opportunity. 0 of 0 people found the following review helpful. Read this book only if you like analytical discussions. By A M The book discusses the question: what is the meaning of causality in science. It ignores popular discussions, for example Hempel definition of causality. But the main drawback, in my mind is that the book does not explain what this question is interesting or important. 2 of 2 people found the following review helpful. Well researched and tightly argued but, in my opinion, mostly wrong. By Aaron C. Brown In rating this book, I have to distinguish between its innate quality and the extent to which I agree with the author. It is a well-written summary of a broad literature on causality, from which the author builds his own model, and an application of that model to a variety of causality questions. On that basis, it is a four-star book. I liked it less than that however, because I think the author misunderstands the literature, built a poor model and gains little insight by applying it. So to me personally, it was a two-star book. I compromised on three. In many everyday contexts, the meaning of "cause" is clear. Both the accelerator in my car and the speedometer are highly correlated with the car's speed; however I say only the accelerator causes the car to speed up because if I push the accelerator the car's speed changes, but if I move the speedometer needle (back when speedometers had needles instead of digital displays), it does not affect the car's motion. However saying my car's accelerator causes it to speed up will not help me beat a speeding ticket in court, saying the accelerator should pay the fine. The driver is also the cause of a car's speed. And the accelerator does nothing if the engine is not running, or if the car is pushed up against a brick wall, or if the fuel pump is disabled. So there are many things I could say "cause" the car to speed up, from the people who made the car to the absence of brick walls, to Newton's Laws of Motion. The author treats these multiple interpretations as different senses of "cause." But they're really the same sense, they are merely applied in different contexts. All of these things, and more, determined my car's speed; changing any one of them would have changed its speed. Singling out one or another as cause depends on whether I'm asking who should pay for an accident, how to slow down a car, what grades should be allowed on highways, or something else. There are other senses of "cause," and the author identifies (among others) one of the major distinctions. If a medical scientist says smoking causes lung cancer, she means that the chemicals in cigarette smoke often result in changes to lung tissues in individual smokers that increase the likelihood of lung cancer. If a social scientist says the same thing, he means that increases in population rates of smoking lead to increases in lung cancer incidence. It's quite possible that one of these things could be true but not the other (in fact, both are very likely true, but that's an empirical matter, not a logical one). These are fundamentally different meanings of the word "cause," and philosophers can come up with additional meanings. However, because the author mixes contexts with meanings, his discussion gets incoherent. Next the author propounds his own three-headed decomposition of cause, but I don't find it useful. The main reason is that when he applies it to specific questions, it becomes slippery. I could argue all of his cases, using his same principles, and come up with entirely different conclusions. Thus I don't find it a reliable way to sharpen analysis of cause or generate agreement among researchers with different perspectives. I also am unimpressed with his approach on theoretical grounds. He insists on stretching "cause" to cover some tricky concepts, but not others. For example, he rules out considering relativistic scenarios in which for some observers, effects precede causes (in the classic example, Mary shoots and kills John with a tachyon gun, but claims she can not be convicted of murder because John was dead before she pulled the trigger). But careful consideration of relativity is central to the idea of cause. On the other hand, the author cites both Heisenberg's uncertainty principle and Gdel's incompleteness theorems as reasons that causes can never be complete. I disagree with each argument individually. There are quantum mechanics interpretations that preserve the classical notion of cause, and other interpretations that modify it. There is no agreement today which one is correct. But even if the classic notion has to be modified, that doesn't mean cause is uncertain, just that it's different from macroscopic cause. And Gdel's work is in pure logic. No one has shown that there are physically meaningful theorems that are true but cannot be proven with conventional mathematics, nor that some combination of alternative mathematics cannot account for all physical calculations. But more important than my individual disagreements are that these are two entirely different arguments, lumping them together reflects deep confusion. I can recommend this book only for its broad coverage of ideas about causality and specific applications. If you don't agree with the author's approach, you will find the book somewhat frustrating and incoherent. But if you have more sympathy for the approach, you could learn a lot from the book.

Why was there a meltdown at the Fukushima power plant? Why do some people get cancer and not others? Why is global warming happening? Why does one person get depressed in the face of life's vicissitudes while another finds resilience? Questions like these questions of causality form the basis of modern scientific inquiry, posing profound intellectual and methodological challenges for researchers in the physical, natural, biomedical, and social sciences. In this groundbreaking book, noted psychiatrist and author Peter Rabins offers a conceptual framework for analyzing daunting questions of causality. Navigating a lively intellectual voyage between the shoals of strict reductionism and relativism, Rabins maps a three-facet model of causality and applies it to a variety of questions in science, medicine, economics, and more. Throughout this book, Rabins situates his argument within relevant scientific contexts, such as

quantum mechanics, cybernetics, chaos theory, and epigenetics. A renowned communicator of complex concepts and scientific ideas, Rabins helps readers stretch their minds beyond the realm of popular literary tipping points, blinks, and freakonomic explanations of the world.

Peter Rabins shows incredible breadth of knowledge and his thesis that there are three distinct approaches to causation, appropriate for different types of questions is compelling. His writing is engaging, and the subject matter is deeply relevant. (Simon Levin, Princeton University, author of *Fragile Dominion: Complexity and the Commons*) Peter Rabin's book draws upon science, statistics, philosophy, and religion to stretch readers' thinking about the 'why' and 'how' of what happens. It provides a remarkably lucid synthesis of diverse ideas about causality based on superb scholarship and is always entertaining. I heartily recommend it. (David Reuben, MD, David Geffen School of Medicine, University of California, Los Angeles) From the two year old child's endlessly nested 'why' questions to the Old Testament and the modern scientist, and through many philosophers in between, Peter Rabins takes us on a fascinating quest in search of answers to that seemingly simplest of all questions: Why? Simple but enigmatic because, like the two year old, how do we know when to be satisfied and how do we know when we know? Throughout *The Why of Things*, Rabins examines fundamental aspects of how we know or don't. In his erudite yet accessible book, readers will learn everything from philosophical categorization to nonlinear dynamics in a way that will suddenly make sense, even if they never do find out exactly why. (Stuart Firestein, Columbia University, author of *Ignorance: How It Drives Science*) if you're looking to learn how to better reason things out through logic and comparative analysis, then this one may be for you. (Lifelong Dewey Blog) Quite simply, wow. This is one of the most complex, mind-boggling and ultimately satisfying books I have read in a very long time. (The Garden Window Blog) A most enjoyable read and source of inspiration. The book constitutes a noteworthy addition to Professor Rabins' academic production. Philosophers of science and perhaps more specifically philosophers interested in causality, explanation, or medicine would gain a lot in reading it. (Metascience) About the Author Peter Rabins is the Richman Family Professor for Alzheimer's and Related Diseases and director of the Geriatric Psychiatry program in the Department of Psychiatry and Behavioral Sciences at Johns Hopkins University and a member of the Johns Hopkins Berman Bioethics Institute. He is the author or editor of eight books and coauthor of the landmark title *The Thirty-Six-Hour Day: A Family Guide to Caring for Persons with Alzheimer Disease, Related Dementing Illnesses, and Memory Loss in Later Life*.