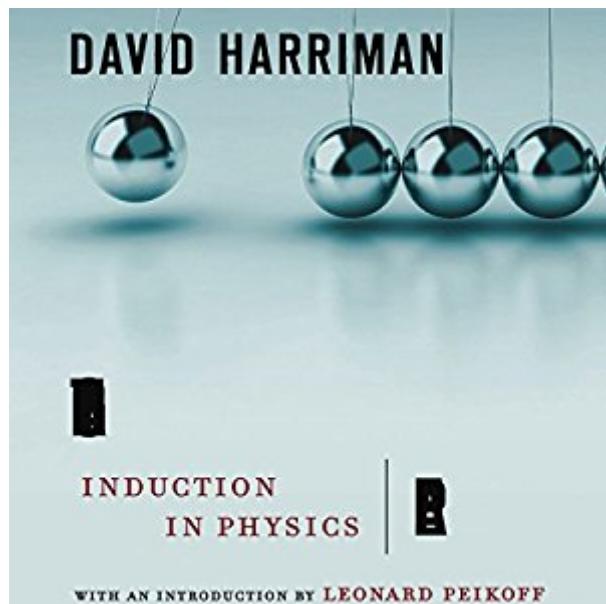The book was found

The Logical Leap: Induction In Physics

Synopsis

A groundbreaking solution to the problem of induction, based on Ayn Rand's theory of concepts. Inspired by and expanding on a series of lectures presented by Leonard Peikoff, David Harriman presents a fascinating answer to the problem of induction-the epistemological question of how we can know the truth of inductive generalizations. Ayn Rand presented her revolutionary theory of concepts in her book Introduction to Objectivist Epistemology. As Dr. Peikoff subsequently explored the concept of induction, he sought out David Harriman, a physicist who had taught philosophy, for his expert knowledge of the scientific discovery process. Here, Harriman presents the result of a collaboration between scientist and philosopher. Beginning with a detailed discussion of the role of mathematics and experimentation in validating generalizations in physics-looking closely at the reasoning of scientists such as Galileo, Kepler, Newton, Lavoisier, and Maxwell-Harriman skillfully argues that the inductive method used in philosophy is in principle indistinguishable from the method used in physics.

Book Information

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Customer Reviews

This book shows how to think scientifically. Thinking scientifically, or rather correctly, is the means to acquire knowledge not in text books.For me personally, I am a computer programmer and I wanted to create better user interfaces. Instead of googling it or finding books on it, I just figured it out myself and my method was based on this book. I successfully figured out that a user interface structure dead ends at a control and that control is "about something". Controls about the same

thing are spatially arranged together. Just this observation allowed me to organize the controls on my user interface. I moved entire sections to different tabs and changed the scattered layout to a grouped one.So how did this book help me do that?One of my mistakes in thinking abstractly was that I ignored details because I thought those details would distract me from the higher level concept. That was a mistake and it was the cause of me not being able to discover those higher concepts. What I learned in this book is that higher concept come from those detailed studies. In my UI discovery I started analyzing an individual control and understanding what it was, then I studied another and then I "realized" that a set of controls are about the same thing. So the main thing I learned from this book is to study individual cases and that the study of those cases leads me to the higher concepts.I took me almost a month to read the book, but learning that one things was worth it. Everyone one is different and may learn something different from this book. The book is grounded in solid epistemology based on Ayn Rands theory of concepts and the author was guided by Leonard Peikoff which inherited Ayn Rands estate when she died.I hope you find as much value in this book that I have.

The problem of logical induction has plagued modern philosophy ever since Francis Bacon proposed empiricism as the foundation for knowledge. The problem with empiricism is that any property found in a sample from a much larger group may not be representative of the entire group. This is called the black swan problem. If one counts 100 white swans without evidence of any black swans that does not exclude black swans elsewhere which have not been sampled. David Harriman used Ayn Rand's philosophy to mitigate the problem. His thesis is that in physics the strength of induction is not based on the size of the sample studied but is based on the theoretical construct in which the sampled properties occur. In other words the physical universe we observe has many interlocking properties which any new observations must fit into. His book has strengthened the theoretical foundation for induction but it has not completely solved the problem of induction. Even if the results of induction could be established as an accurate representation of the laws which the physical universe follows now, it can not prove that the physical universe will follow the same laws in the future (provided one believes time flows from past to future).

Halfway through the book, and the most interesting and enjoyable aspect of the design of the book is how it not only walks you through the inductive process in science, but also applies induction in the book itself.I heard about this book in my research of education and Van Damme Academy where I was surprised to find that many of their 8th graders take college level physics courses due

to their understanding of science derived from the principles discussed in this book.

A clearly-written, understandable overview of how many of the great scientists (Galileo, Kepler, etc.) came to their relative conclusions.Although this book communicates it's ideas fairly effectively, the author uses the same "formula" for explaining various discoveries in science. This gets pretty repetitive and makes some sections hard to get through

The clearest, most precise book about the scientific method of gaining knowledge. It is in stark contrast to today's typical methods that are completely detached from reality. The book is such a refreshing change, I'll read it many times.

Had to get this book for class. So yeah, i dont particularly enjoy reading it. However, its one of those books that i might have actually read without class. It is a good read and brings up some really good points. Very easy to understand.

This is THE place to go if you want to understand "inductive" reasoning. While David Harriman explains it in relation to physics it can certainly be applied anywhere else.

This is an excellent book. I very much enjoyed the history of the atomic theory. The book authoritatively demonstrates the validity of inductive logic.

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