

Causality: Models, Reasoning and Inference, Second Edition

Judea Pearl

Cambridge University Press, 2009, xix + 464 pages, £37.00/\$50.00, hardcover

ISBN: 978-0-521-89560-6

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Readership: Computer Scientists, Cognitive scientists, Statisticians, Philosophers, Social Scientists, and Economists, in fact anyone interested in causality. Some preliminary knowledge of graphical models will help, but it is not essential, since the topic is introduced well in Chapter 1.

This is the second edition of the famous book with the same name. The first edition, published in 2000, has seen eight printings up to 2008, showing its immense popularity.

Causality has been a very controversial topic till the first edition of the book came out. In his own words, “the popular reception . . . and rapid expansion of the structural theory of causation call for a new edition to assist causation through her second transformation—from a demystified wonder to a commonplace tool in research and education.” There are substantial additions to each of the ten chapters of the first edition. In addition, there is a new chapter which “elucidates subtle issues that readers and reviewers have found perplexing” in one sense or other.

I recall I felt very humble in the mid or late sixties when I realized I had studied genetics in the late fifties without ever hearing of the DNA, though the path breaking paper of Watson and Crick had appeared several years ago I have felt equally humble as I went through Pearl's second edition and realized how little I knew about of causal rather than association based graphical models, their rigorous justification and the light that causal models throw on confounding, interventions, and counterfactuals, to mention some of the most fundamental notions of Statistics. Having read the book I would add to this list structural equations. Perhaps the most profound fact I have learnt is that causes can be defined rigorously, except in certain well identified cases, and identified from possibly a rather large amount of data.

The book is very well written, blending intuition, humor, polemics, and rigorous mathematical and philosophical argument. Even if a reader doesn't go through the rigorous proofs or algorithms, he/she would come away with substantial insight about the above basic notions.

There is a catch however. Apparently many of these ideas are still not accepted by some very distinguished statisticians. Throughout the book Pearl conducts a debate with them. His ideas

seem very convincing. Whether all his ideas appearing for the first time will be as “stable” as the earlier part, may not become immediately clear, but they certainly deserve full attention.

This is a wonderful book.

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