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Review of: Daniel M. Kammen & David M. Hassenzahl, *Should We Risk It: Exploring Environmental, Health, and Technological Problem Solving*

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Abstract

A review of the book *Should We Risk It: Exploring Environmental, Health, and Technological Problem Solving* by Daniel M. Kammen & David M. Hassenzahl, (Princeton University Press 1999). Preface, acknowledgments, introduction, appendix, index. ISBN: 0-691-00426-9 [404 pp. \$39.50. Cloth, 41 William Street, Princeton, NJ 08540].

Keywords

risk assessment, technology, innovation

Erratum

The citation for this review is *11 RISK 255 (2000)* in most commercial databases.

Daniel M. Kammen & David M. Hassenzahl, **Should We Risk It: Exploring Environmental, Health, and Technological Problem Solving** (Princeton University Press 1999). Preface, acknowledgments, introduction, appendix, index. ISBN: 0-691-00426-9 [404 pp. \$39.50. Cloth, 41 William Street, Princeton, NJ 08540].

Should We Risk It? is an example of how modern society has changed its attitude and become more responsible in addressing risk and risk management. A generation ago, society had less interest in understanding the risks of certain technological events and situations. However, today one rarely undertakes an action without wondering what risks are associated with that action and what loss avoidance measures should be taken. Of course, overly zealous lawyers, paid with contingency fees, may drive this conservative behavior in society.

This 400-page book would most likely be found on the bookshelf in a campus bookstore as a required text for a graduate student studying statistics or epidemiology. Or, perhaps, an unopened copy of this book may also be found on the bookshelf of a policy maker lacking good judgment regarding risk issues. The authors make it clear, however, that this book should be read by anyone who makes professional and policy decisions regarding risks – primarily local, state, and federal policy makers, engineers, and environmental scientists.

Thus, the authors constructed **Should We Risk It?** in a predictable, logical manner that will appeal to engineers and scientists. Each chapter introduces a subtopic and then presents an example problem complete with an explanation. Related problems requiring the statistical method at hand follow the example problems. The problems, albeit filled with numbers, Greek letters, and formulas, would also appeal to social scientists and other policy makers because they are derived from real life examples. A reader's interest is sure to pique from the "real-world" approach of this text. For example, in reference to the issue presented in Jonathan Harr's novel, **A Civil Action**, the authors ask the reader to estimate the dose of trichloroethylene delivered to a child living in Woburn, Massachusetts while Wells G and H supplied drinking water to that community.

This book as a whole is logically organized and clearly written, which is a rare luxury for students and others new to a subject matter. The first two chapters introduce the topic of risk and introduce the reader to the two major ways to assess risk – stock-flow models and cause-effect models. The next chapter provides an introduction (or perhaps a review) of basic statistics commonly taught in college-level introduction courses. While the authors claim that the reader need not have taken college statistics to understand this book, it is highly desirable because the authors' presentation of basic statistics is cursory at best. However, in chapter four, the authors have done a fine job in presenting advanced statistical methods – Monte Carlo and Bayesian analysis.

The remainder of the book applies the statistical tools introduced in the first few chapters to fields where risk analysis is highly applicable – toxicology, epidemiology, exposure assessment, and technological risk. In these application chapters, risk analysis problems include calculating the probability that a pesticide will cause cancer, the expected death rates for various exposure levels of benzene, and the probability of dying while flying on a commercial airline. The authors stress throughout the book that risk analysis methods apply not only to public health issues, but also to areas such as finance and investments. The last couple of chapters discuss how risk analysis data can be interpreted to make intelligent decisions to avoid future losses, as well as how to present this information to the people who are making policy-making decisions based on the data.

Overall, this book is certainly worth reading. In today's world where risk analysis is becoming increasingly important, *Should We Risk It?* may even inspire others to become more accomplished in this area.

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