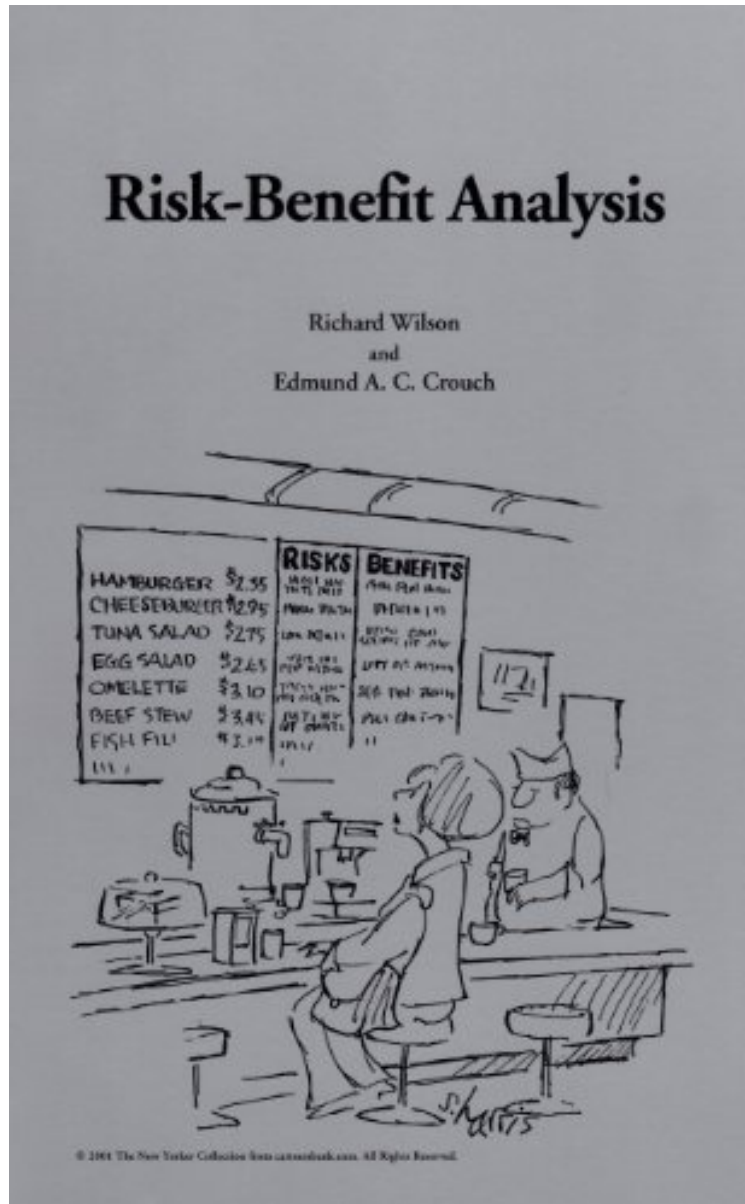


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Richard Wilson, Edmund A. C. Crouch
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Richard Wilson, Edmund A. C. Crouch : Risk-Benefit Analysis: Second Edition (Harvard Center for Risk Analysis) before purchasing it in order to gauge whether or not it would be worth my time, and all praised Risk-Benefit Analysis: Second Edition (Harvard Center for Risk Analysis):

6 of 8 people found the following review helpful. A great introduction to an important topic
By MARTIN HELLMAN
In my efforts to better understand risk analysis, this book has been an invaluable aid. In addition to presenting the important topics in an understandable fashion, it often has entertaining and interesting examples. Highly recommended.

Over the centuries, mankind has slowly reduced the risks and hazards that even as recently as a century ago kept life expectancy to a mere 45 years. Our average lifespan has improved to 77 years by remarkable progress in public health and safety. But with this improvement has come a demand for greater efforts to improve both life expectancy and the quality of life. The first edition of this book, published in 1982, was a pioneer in the development of logical, yet simple, analytic tools for discussion of the risks which we all face. This new edition, revised, expanded, and illustrated in detail, should be of value both to professionals in the field and to those who wish to understand these vital issues.

From The New England Journal of Medicine
Risk-Benefit Analysis comprises a constellation of methods, drawn from many disciplines, and addresses the question of whether a risk is "acceptable." Whether this question is raised in the context of clinical decision making or public policy, the principles are the same: the analysis requires a comprehensive estimation and evaluation of risks and benefits, highlighting the trade-offs between the two that inform a policy decision. Such analysis also entails a careful quantification of the costs associated with a proposed program for reducing or avoiding risks. The book is written by two Harvard physicists who have enjoyed high-profile careers as risk analysts, mainly in the areas of nuclear power and the environment. This experience equips them well to take the reader through the many theoretical and practical facets of risk analysis covered in this book -- from risk estimation, risk perception, risk-benefit analysis, and risk management to a finale made up of lists of many risks. Introductory topics include the definition and measurement of risk. In simple statistical terms, risk can be thought of as expected loss -- the probability of some adverse event, multiplied by some measure of the severity of that loss. For the most part, this book considers events with a small probability and substantial consequences (e.g., death). Much of the discussion is focused on counting deaths and measuring reduced life expectancy. But, as the authors note, the age distribution of populations exposed to a risk is an important differentiating factor between these two measures, because avoiding 10 premature deaths in children results in a gain of more life-years than would averting a similar risk among octogenarians. Particularly in health care-related risk-benefit analysis, using the broader measure of quality-adjusted life-years lost permits the measure of risk to incorporate reductions in the quality of life, as well as in its quantity. But the authors offer little discussion of utility-based measures of outcome -- such as "standard gamble" -- that have become common in health economics and provide a method for assigning utility values to health outcomes on the basis of a person's stated choice between hypothetical health risks. As every epidemiologist knows, a key element in measuring risk is finding the best measure of exposure to use as the denominator for the observed number of events. Comparing the number of accident-related deaths per 1000 trips by car, airplane, or train will not necessarily give the same answer that would be found with a denominator of miles traveled. In the realm of health care, comparing surgeons or hospitals in terms of operative risk requires careful "risk-adjusted" analyses to allow for differences in exposure to confounding factors. The authors also do a good job of explaining the pervasiveness of uncertainty in risk assessment, particularly in the estimation of exposure-outcome models. How the public perceives risk is an important factor for analysts and politicians to recognize and understand. Psychologists such as Paul Slovic have shown that the public's perception of risk is multidimensional. For example, a voluntary risk associated with a certain probability of death will be seen as more acceptable than an involuntary risk associated with the same probability of death. Smoking cigarettes or riding a bicycle without a helmet are personal choices over which we think -- perhaps incorrectly -- that we have some control. But exposure to environmental pollutants is seen by most people as involuntary risk taking -- a group-based activity in which individual control is lost. How we value these psychological attributes of risk contributes to our judgment about what is an acceptable risk. Wilson and Crouch do an excellent job in reviewing alternative methods of presenting risk. Drawing on their experience in trying to present risks clearly and in the proper context, they have assembled a useful compendium of indexes of risk. I particularly like the concept of risk equivalents. For example, the following four activities all carry the same risk of premature death: driving a car for 4000 miles, smoking 100 cigarettes, rock climbing for two hours, and working in the chemical industry for one year. If you enjoy smoking a cigarette while you drive to your job in the chemical industry and engage in rock climbing on the weekends, it is unclear whether these risks are additive or multiplicative. An important theme of this book is that the reduction or avoidance of risk is not an activity that is without its cost. Economic methods of evaluation, such as cost-benefit analysis, are needed to determine whether a particular risk is worth reducing, given the costs of the program that would be required to reduce it. As the authors note, such analyses hinge on what monetary value should be assigned to improved health or reduced risk. They point out that, in its cost-benefit analyses, the Environmental Protection Agency places a value of approximately \$6 million on a "statistical" life. They also present a table indicating the cost effectiveness of 500 lifesaving programs. This table makes for fascinating reading, showing the order-of-magnitude differences between various sectors of the economy in the cost of lifesaving programs per life-year

saved -- for example, \$3,100 per life-year for the chlorination of drinking water, \$30,000 per life-year for smoke detectors in airplane bathrooms, and \$40 million per life-year for radionuclide emission control during the disposal of piles of uranium-mill tailings. Does risk-benefit analysis have a future in U.S. government policy analysis? The preface to this book is by John Graham, who until recently was the director of the Harvard Center for Risk Analysis. On July 19, 2001, the Senate voted 61 to 37 to confirm Graham as the new administrator of the federal Office of Information and Regulatory Affairs in the Office of Management and Budget. In this role, Graham will serve as the nation's regulatory gatekeeper, passing judgment on all major national health, safety, and environmental standards. Under Graham's administration, new regulatory proposals are increasingly likely to be required to be supported by risk-benefit analysis, and I predict that this book will have quite a market among federal bureaucrats. This book is a wide-ranging and readable introduction to risk-benefit analysis that should be a welcome addition to many bookshelves. It contains many entertaining examples, anecdotes, and excellent cartoons. Given the price of \$25, the risk-benefit equation makes it a good gamble. Bernie J. O'Brien, Ph.D. Copyright 2002 Massachusetts Medical Society. All rights reserved. The New England Journal of Medicine is a registered trademark of the MMS. This book provides a comprehensive and up-to-date analysis of the methodology for assessing and managing risks. Based on well-developed lectures given for many years at the Harvard Center for Risk Analysis and written by both an academic and a practitioner in this rapidly evolving field, it contains clear explanations, excellent examples, and duality figures and tables...The best yet on this topic. (S. A. Batterman Choice 2002-04-01)About the AuthorRichard Wilson is Mallinckrodt Professor of Physics at Harvard University.Edmund A. C. Crouch is Principal, Cambridge Environmental, Inc.