

Book Review

Risk and Precaution, Alan Randall, Cambridge University Press; 1st edition (2011), 278pp. (paperback), £18.99. ISBN: 9780521759199

As the world faces ever more complex risks, it is essential that these risks are managed effectively. The author believes that there is room for improvement in current practice and this book is his attempt to improve the design and practice of integrated risk management, and to institutionalise its application to broad categories of potential threats.

Drawing on his experience in environmental economics and policy, Alan Randall aims to provide a risk management framework that includes the concept of the precautionary principle. Not intended to be limited to the environmental field, his goal is for this principle to be adopted across industries.

The precautionary principle (PP), which depends on a risk adverse/ “cautious” approach, has already been adopted in one form or another by various governments and international bodies, but has also attracted controversy and specific criticisms. Randall attempts to address these criticisms and define a robust PP that can be taken seriously in risk management.

The book consists of 14 chapters divided into five parts:

- Part I sets the background. It defines the PP and its key tenets, highlights challenges associated with its use, and includes many examples of its application, primarily within the realm of regulating activities based on the risk of harm to human health and the environment.
- Part II is dedicated to outlining and assessing the standard approach to risk management.
- Part III deals with defining and justifying a coherent precautionary principle to be used in integrated risk management.
- Part IV is the point at which ordinary risk management (ORM) and PP meet. It deals with establishing the role of principles in the policy environment, considering moral intuitions that inform and support the PP and integrating the insights of ORM and PP into a coherent risk management framework.
- Part V presents the conclusion, and serves as a summary of the proposed integrated risk framework.

Part I deals with the background of PP and associated controversies. Whilst Randall provided well thought-out arguments in favour of PP, at times it felt very repetitive as a number of the criticisms he addressed seemed to be linked even though they stemmed from different sources. In particular “PP stifles innovation” and “PP is anti-science” kept reappearing in different forms. Luckily once you move on from this section, things begin to improve.

In Part II, Randall pinpoints areas where current risk management practice is falling short. It is worth noting that Randall does acknowledge that ORM is an appropriate default approach to risk management, but mainly for managing run-of-the-mill risks. The shortcomings arise in practice when dealing with extraordinary risks. These extraordinary risks could occur because of novel threats or system overstress from business as usual activities. Examples of novel threats in the book

included environmental toxins like asbestos, PCB or the introduction of drugs like thalidomide; whilst climate change reflected system overstress.

The specific shortcomings Randall identified include the tendency of current risk practice to underestimate risk in complex systems, the lack of routine *ex ante* risk assessment and the inability of the system to deal effectively with high-damage, low likelihood events.

Part III contains the bulk of the material. In this section, Randall sets out his definition of a coherent precautionary principle. In chapters 7–10, he attempts to achieve the following ten tasks from his checklist.

- i. Conceptualise a PP that avoids the charge of meaninglessness, by directing it toward risks that are in some sense unusually serious.
- ii. Concentrate the search for a meaningful PP on the class of cases where conditions ideal for ORM are absent.
- iii. Specify a PP that is more than a soft norm (*statement of a widely-honoured value*).
- iv. Specify a PP framework that is distinguishable from ORM both logically and practically.
- v. Develop standards of evidence for things and acts that plausibly could harm us.
- vi. Elucidate the relationships between scientific evidence and precautionary remedies, addressing the kinds of evidence that would justify invoking drastic precautionary interventions.
- vii. Include provisions for mitigating risk-risk trade-offs.
- viii. Explore the design of approaches and procedures to minimise the intrusiveness and disruptiveness of precaution, while providing adequate protection from threats of harm.
- ix. Conceptualise and design precautionary remedies that are calibrated to provide precaution without causing undue impediments to innovation.
- x. Consider strategies involving a sequence of pre- and post-release filters and iterative approaches that encourage learning and adaptation, and develop them in promising cases.

The remaining chapters progress this framework and the book concludes with a useful synopsis of the overall proposal that incorporates both ordinary risk management and the precautionary principle.

The book is well written and the content is generally quite accessible. As it is intended to appeal to a broad audience, the content is not overly technical, and I was pleased that the concepts and theories were clearly defined. There is some mathematical content, but it tended to be limited to a brief discussion of the valuation of real options and the concept of path dependence. There is also an illustration of disproportionate and asymmetrical threats which relies on statistical distributions.

Randall does not assume any prior knowledge of the issues and draws on illustrative examples from medicine, pharmacy, synthetic chemicals, nanotechnology, the environment and conservation of natural resources to make his case. This helps make the material relevant to a wide variety of readers.

Overall, I thought Randall's proposals were sensible and thought provoking, and I believe he accomplished his goal of defining an integrated risk framework. The strength of the book lies in Randall's identification of the best components of current thinking and his creation of a useful,

complete package. I liked his acknowledgment that in practice there would be issues to resolve in applying these principles to any particular case. This shows that he maintains a realistic outlook and is not simply focused on the theoretical.

I would recommend the book as a useful addition to any risk management library.

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