

Introduction

Each year, at an increasing rate, we discover, rediscover or create anew threats to and from the environment. Identifying these hazards, estimating the threat they pose to humanity and the environment, and evaluating such risk in a comparative perspective is the work of risk assessment. This is not the work of specialists alone, for everyone makes appraisals of environmental threat. From the traveller's hesitancy at the water pitcher – 'Is it safe to drink?' – to the global query about nuclear waste – 'Is it safe to dump?' – individuals and societal groups make judgements about threatening situations arising from or related to the environment.

As environmental threat proliferates, scientists find themselves (or place themselves) in the center of concern, controversy, and policy formulation. Increasingly, this is happening to those working on fundamental as well as more applied problems; and also to those who disseminate their findings in the scientific literature, through more popular media, or to formal channels of advice and decision. As society needs to rely on the discoveries and judgements of science for its safety and well-being, there is need for both the purveyors and users of scientific knowledge to understand what is known about the identification of hazard, the assessment of risk and its social evaluation.

Such knowledge includes diverse theories of society and environment, of probability and statistical inference, of decision, choice and value, as well as formal and informal, logical and intuitive, methods and modes of assessment. And such theory and methods need to be considered in the context of praxis: actual experience with the risk assessment of environmental hazards and observations both from related areas of human endeavours and the controlled social laboratory. While such a task is probably beyond the efforts of the single scientist, this monograph can serve as an introductory review and a source for tentative generalizations.

