Book Review

Peter J. Balint, Ronald E. Stewart, Anand Desai and Lawrence C. Walters
Wicked Environmental Problems: Managing Uncertainty and Conflict
Washington, DC: Island Press, 2011

Reviewed by Michael W. Popejoy

We all know about problems, and the various definitions of problems: complex problems, critical problems, intractable problems, problems with rational solutions, and problems that resist rational solutions. In the field of public health, we grapple with social problems that cause poor health outcomes such as lack of education, poverty, illiteracy, lack of access to health care facilities, etc.

Yet, here comes a more recent; and more complicated order of problems called "wicked problems." And, by wicked, the meaning is clear when we examine the characteristics of this category of problems. Wicked problems resist rational solutions; indeed, it is possible that truly wicked problems have no solution whatsoever that will satisfy everyone that are affected by the problem under study. Obviously, those people who solve problems and those people are affected by problems certainly resist hearing that any problem is most likely irresolvable.

"A wicked problem is characterized by a high degree of scientific uncertainty and deep disagreement on values." (p. 2). "Consequently, there is no single, correct, optimal solution." So, in effect, wicked problems have no single best solution which can be a cause for concern for many whose job it is to solve social and environmental problems. When scientific uncertainty meets profound differences in perceptions, attitudes, and values of the key stakeholders, we have problems that any solution will be almost impossible to satisfy everyone involved.

Many, if not all, social problems possess a high level of complexity and social conflict. The usual method of problem structuring and analysis fail to help us arrive at a solution; thus the reliance on technical analysis alone is not possible. "Problems take on a complexity that often extends well beyond the merely intricate and assumes many forms, including high levels of risk; scientific uncertainty; biological complexity; social complexity; vast scope and scale of issues involved; and the absence of a clear public consensus on values, the nature of the problem, or acceptable solutions." (p. 9). When the relationship between an action and its outcome is clear, we have a programmed decision; and this poses few problems in implementation since the science is clear and the values are well established and widely agreed upon. Such is not for the wicked problem.

The authors provide the readers with a ten point set of characteristics by which to identify the wicked problem: there is no definitive formulation of the wicked problem; wicked problems have no stopping rule; solutions are not true or false, but good or bad or satisfying or good enough; there is no immediate and no ultimate test of a solution; there is no opportunity to learn by trial and error (it is a one shot operation); they do not have a set

of potential solutions; every wicked problem is essentially unique; every wicked problem can be considered a symptom of another problem; the existence of a discrepancy representing a wicked problem can be explained in numerous ways; the planner has no right to be wrong (p. 12).

The problem with wicked problems is in attempting to formulate the problem is itself a problem and it is not always possible to look for similar problems for a possible solutions since that is the uniqueness nature of wicked problems—thus they are wicked. In traditional decision theory, the planner focuses on a set of desirable choices each with its own costs and benefits. Wicked problems defy that rational approach since a set of potential solutions do not exist and there is no way to determine if all relevant solutions have actually been considered. "With these ill-defined problems and solutions, the set of feasible plans of action relies on realistic judgment and on the amount of trust and credibility between policy makers and the public, which may be small or nonexistent." (p. 14).

The authors in this book applied the essentials of wicked problem definitions and characterization to environmental problems. However, readers can learn a lot about wicked problems by reading just the first two chapters; then if interested in applied wicked problem solving in environmental systems, the reader can move on to the later chapters where four cases are presented; the Everglades; the Ngorongoro Conservation Area in Tanzania; carbon trading in the European Union; and management of the Sierra Nevada national forests.

The book is well referenced for advanced reading on any of the subjects discussed with its 17 pages of reference citations; and of course, there is a comprehensive index providing easy searching for specific topics in the book. It is not certain if this book is intended as a textbook for students since it is not set up with chapter objectives or discussion questions and other symbols that characterize a textbook; however, it could be a secondary reader for any graduate course in which social and/or public health problems are being addressed.

The authors' final recommendations are very important to note when dealing with wicked problems. "We suggest that a public manager facing a wicked problem should (1) stop looking for the perfect solution; (2) seek instead a satisficing solution; (3) consider applying the iterative, analytic, adaptive, participatory process described in the book." (p. 207). However, this approach may be very difficult for the public manager who faces a public constituency who demands and expects a solution even when that solution is elusive.

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