place? A molecular and cellular theory of depression recently put forward by Ronald Duman and his colleagues from Yale (*1*) seems to fit the bill (*2*). Previous theories have been unable to explain the time lag between antidepressant drug administration and lightening of affect. Duman's group pinpoints intracellular mechanisms, acting in the right time frame, that decrease or increase the generation of neurotrophic factors necessary for the survival of specific neurons, particularly hippocampal ones. The new theory also suggests the answer to our earlier question, "Why 40 years in the conceptual wilderness?" Simply because we were not yet ready technically. (I am specifically thinking of the molecular biological revolution, which has provided sophisticated new techniques for measurement.) Also of note is that the painstaking fundamental research underpinning the new theory stems not from the efforts of the big battalions—producing their me-too drugs to a set marketing recipe, the monoamine hypothesis of depression—but from the joint efforts of university-based research teams and small, entrepreneurial companies based on molecular biology. A pity that Healy's book appeared just too early for him to pronounce on what may turn out to be the great leap forward of this psychiatric generation. Let us hope that he will do so in the next edition of this excellent and thoughtful work.

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2. R. M. Post. *Ibid.*, p. 607.

ENVIRONMENTAL POLICY

Locating Sustainability

Bryan G. Norton

Taking Complexity Seriously. Policy Analysis, Triangulation and Sustainable Development. EMERY ROE. Kluwer, Boston, 1997. xii, 138 pp., illus. $98.50, NLG 215, or £65. ISBN 0-7923-8058-4.

In *Taking Complexity Seriously*, Emery Roe steps boldly into an important and underdiscussed area—the current state of confusion in environmental policy analysis. The book must be taken seriously both because of the importance of the issues raised and because the author's pluralist viewpoint is sure to be provocative. Taking the debate surrounding sustainable development as a case study, Roe addresses three related issues: (i) problems of policy analysis in complex situations; (ii) the development of "triangulation," a comprehensive method of analysis for complex policy problems, which proposes a particular sort of "meta-narrative" to guide policy; and (iii) the exploration of four, particular narrative analyses. Each of these narratives, based on a different method, develops a very different understanding of sustainability debates. Hopefully, the book will continue and clarify the lively debate over the problems and prospects of sustainable development. This debate was fanned in 1993 by Ludwig, Hilborn, and Walters' *Science* Policy Forum "Uncertainty, Resource Exploitation, and Conservation: Lessons from History," and continued in a collection of responses by ecologists and environmental managers in a special feature in *Ecological Applications* that same year (*1*). Roe argues that differing notions of "management in the face of uncertainty and complexity" ensure that these arguments will fail to achieve consensus, and that the only way to address such a complex situation is through his pluralistic method of triangulation.

One of the strengths of Roe's book is the author's success at bringing insights from the literature of mainstream policy analysis to bear on the sustainable development debate. Using some common typologies and jargon from organization theory, Roe leaps over one much-discussed aspect of the sustainability disputes—the clash between mainstream economic approaches and the "ecological" economists such as Herman Daly and Robert Costanza. If I understand the argumentative terrain, Roe goes beyond that debate to insist that an economic analysis of policies, even if ecologically informed, would provide at best only one tool among many in the arsenal of policy analysts. So, while accepting economic and other optimization methodologies as perhaps useful in other situations, Roe holds them to be of little value in the sustainability debate, because of their "palpable shortcomings in underwriting and stabilizing the assumptions for decision making in the face of high uncertainty and complexity" (p. 8). Under these conditions, Roe recommends a method of triangulation—using several, alternative methodologies based on quite different assumptions.

The least convincing aspect of the book is the meta-narrative developed to relate the four analyses explored in the process of triangulation (Girardian economics, cultural theory, critical theory, and the local justice framework) to one another. In particular, it is unclear exactly why these four approaches qualify as a part of the triangulation while other approaches fail to do so. Roe chose the approaches because "each provides a powerful, albeit radically different, tack on the complex management issues core to sustainable development" (p. 23). But I did not find his argument for considering these particular approaches "orthogonal" in important respects either clear or compelling. Roe contrasts his own method with the recommendation of traditional policy analysts, who have suggested that, in the face of disagreement over both ends and means, the best we can do is to hope for "inspiration." It is not clear how triangulation, based on several incommensurable narratives delivered to the policy-maker from multiple perspectives, does much more than prepare the ground for a still-necessary inspiration. What seems missing is an account of the logic of the method of triangulation, some theory that explains why triangulating—and which triangulation(s)—leads to convergence on new problems and new solutions.

Fortunately, the four narratives themselves succeed despite problems with the meta-narrative that relates them to one another. By actually showing how exploring sustainable development within several analytic frameworks broadens and transforms the problems, Roe makes at least an important aspect of his case for a more pluralistic approach to policy analysis. So this is a useful book, both for what it accomplishes (linking the discourse of traditional policy analysis with that of sustainable development, developing and applying four alternative, less traditional analytic approaches) and also for what it does not. It does not, I think, provide a clear and general understanding of the logic of pluralistic and multicriteria analyses of environmental problems. Perhaps, however, Roe's success in using such criteria, and his provocative comments on the nature of policy process, may stimulate further discussion and improved understanding of pluralistic environmental policy analysis and its uses.

References

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The author is in the School of Public Policy, Georgia Institute of Technology, Atlanta, GA 30332, USA. E-mail: bryan.norton@pubpolicy.gatech.edu