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**The Choice Modelling Approach to Environmental Valuation,  
edited by Jeff Bennett & Russell Blarney**

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catches do drop in the future, as Acheson concedes they may, perhaps the drop would prove to be less severe with a 3.5-inch limit in place.

Still, advocates of scientifically based, centralized, top-down policy should consider Acheson's analysis carefully. In a pattern consistent with public choice theory predictions, semi-privatization of the Maine lobster fishery has fostered cooperation that appears to result in comparatively successful resource management. But Acheson's depiction of the political power configuration within the lobster industry may make a more compelling case for decentralization than does public choice theory. A variety of economic, social, and cultural characteristics of the Maine lobster industry lead many within it to react to top-down policy with suspicion and fierce resistance. Almost any attempt to implement such a policy has been doomed from the onset. Decentralization is the best option for Maine lobster management because politically it is the only option. The Maine lobster fishery is not anomalous in this regard; political hostility to centralized resource management is closer to being the rule than the exception in the United States. To inform policy successfully, science must contend more effectively with decentralized politics than it has in the case of the Maine lobster fishery.

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*The Choice Modelling Approach to Environmental Valuation*. Edited by Jeff Bennett & Russell Blamey. Northampton, MA & Cheltenham, UK: Edward Elgar Publishing, 2001. Pp. 269. \$85.00 hardcover.

The current title is part of the publisher's series of works designed to contribute to developments of practices and principles in the field of environmental economics. The present volume introduces with choice modeling a technique that is meant to estimate the demand for environmental goods (e.g., wetlands) and the benefits and costs associated with them. Its editors (and major contributors) succeed in structuring the book into four distinct and logical parts.

Bennett and Blamey provide a detailed introduction to the choice modeling technique in the environmental context. In the last 25 years, a growing interest in environmental choices and values has arisen as a response to a growing relative scarcity of environmental goods and services. The complexity of calculating monetary values attached to environmental goods has prompted an interest among decision makers to seek out more information about the choices available to communities. A key component of that information relates to the above-mentioned values of environmental outcomes. If these values could be estimated in

dollar terms, then comparisons with the values derived from alternative resource development options would be made possible. Similarly, if consumers were willing to pay a premium to obtain environment-friendly products, producers could compare these numbers with the added costs needed to produce such products.

The problem with estimating environmental values is that environmental costs and benefits are not traded in markets. Consequently, estimates based on buying and selling patterns do not apply. The only alternative involves asking people to state their preferences for various alternative scenarios, a set of methods known as stated preference techniques. The best known among them is the contingent valuation method (CVM). In using the CVM, people are asked if they are willing to pay a specified amount for change (if beneficial) or the avoidance of it (if detrimental). The relationship between the probabilities of willingness to pay a certain amount is modeled against different amounts. From this relationship, the mean values of willingness to pay can be estimated. However, concerns arose with the validity of this method, in particular in regard to biases of respondents, yea-saying behavior, and framing issues about respondents' values.

To address these concerns, a new type of conjoint analysis emerged in which respondents are asked to choose between a selection of different alternatives. These alternatives are defined in terms of product attributes and constructed by varying attribute levels. In the end, respondents are asked to make a choice between alternatives. The sequence of choice outcomes allows researchers to model alternatives in terms of attributes, *i.e.*, the higher the level of a desirable attribute (preservation of  $x$  species of wildlife, loss of  $y$  jobs) of an alternative, the greater the satisfaction with that option and the more likely it would be chosen. These models subsequently provide a host of information about the willingness of respondents to make trade-offs between environmental and economic circumstances. This technique became known as choice modeling, or choice experiments.

The following four chapters of this book introduce the theoretical underpinnings of the technique (Part One), demonstrate its application along several case studies (Part Two), provide insights into methodological issues (Part Three), and draw initial conclusions for the technique's prospects (Part Four).

In the first part, "The Technique," Louviere as well as Bennett and Adamowicz present the foundations and statistical details of the choice modeling technique. Especially the second chapter (Chapter 3) leads the uninitiated reader through a step-by-step guide for implementing the technique. Topics include problem outline,

questionnaire development, experimental design, data collection, and statistical analysis.

The second part, "Case Studies," uses three cases to demonstrate the versatility of the technique. The first case study by Gordon, Chapman, and Blamey assesses the options for water supply of the city of Canberra, Australia. Since different options would have different environmental consequences, the community's opinion played a vital role in the decision-making process.

In a second study, Bennett, Rolfe, and Morrison present an application of choice modeling to estimate people's opinion regarding wetland protection. Being among the first studies to explore non-use values, the case confronts the dilemma between conservation and development.

The final case study by Blamey, Bennett, Louviere, and Morrison tackles the use of the technique to predict market shares of a consumer good—toilet paper—when environmental attributes are involved. This particular study operates on the fringe of marketing applications of choice modeling.

With the third part, "Exploring Some Methodological Issues," the discussion moves to specific issues of questionnaire design features. In Chapter 7, Blamey, Louviere, and Bennett examine alternative ways of structuring choice set designs that respondents are faced with. The key issue of this chapter contends with contradiction of what decision makers consider to be important factors (attributes) and what respondents really think. Since the presentation of alternatives impacts respondents' choices, labeling of alternatives and handling of causally related attributes is of concern for investigators.

In Chapter 8, Banzhaf, Johnson, and Mathews describe a critical component of most choice sets. The so-called opt-out option allows respondents to choose none of the presented alternatives, but opt instead for a status-quo, to do nothing, or to go with their usual option. This in turn has implications for the design of the experiment.

Chapter 9 picks up on a common criticism of many environmental studies. Blamey and Bennett explore the phenomenon of "yeah-saying" as a tool for respondents to appear concerned about the environment, how such behavior may hurt the results of a study, and how to safeguard against it.

In the final chapter (Chapter 10), Rolfe and Bennett describe the issue of "framing," *i.e.*, the preference given by respondents to an alternative due to the lack or downplay of an array of other (substitute) goods they might value.

The fourth and final part, "Conclusion," is the editors' honest review of the strengths and weaknesses of choice modeling. They draw

conclusions about the future of the technique and provide suggestions about directions it should take to be a successful tool.

This book introduces us to a research technique that offers great potential to evaluate environmental goods. While it is flexible enough to deal with a range of applications from non-use values of nature preserves to environmentally-friendly consumer goods, it is a book written primarily by and for environmental economists.

The authors succeeded in being very descriptive and organized with the presentation of the material. The casual reader should nonetheless be cautioned that certain parts of the book may be difficult to comprehend, depending on the reader's background. A minimal understanding of multinomial logistical regression analysis and experimental design construction would certainly be useful. Being about a method, this book is primarily intended for scholars and practitioners in the areas of environmental studies and economics who are engaged in this kind of research.

Overall, there are great potential benefits of applying choice modeling to the estimation of non-market environmental values. Allow me to conclude this review by quoting the two editors and main contributors in their own words:

In weighing up the strengths and weaknesses [of this technique] it is apparent that choice modeling is no "magic bullet" in the profession's attempt to deal with the estimation of non-market values....However, the most significant [contribution of the technique] is its ability to produce a rich database on people's preferences and to generate statistically robust models of choice. With that level of information, policy makers are able to make decisions about both the provision and management of natural resources that are far better informed and, hence, more likely to generate net benefits for the community at large.

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*Native American Sovereignty on Trial: A Handbook with Cases, Law, and Documents.* By Bryan H. Wildenthal. Santa Barbara, CA: ABC-CLIO Press, 2003. Pg. 359. \$55.00 hardback.

From 1830 to 1836, George Caitlin traveled around the western United States to paint "plains Indians." Caitlin, a lawyer turned painter, sought to preserve the customs and appearance of the Indians through