1 Introduction

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1.1 Introduction

The process of valuing environmental resources has never been a straightforward process. Although the valuation methodologies have been contributing to an understanding of the social benefits of environmental improvement (or costs of environmental change) for 50 years, the process of environmental valuation remains controversial, and in many ways divides the environmental economics profession. Additionally, the process of environmental valuation is questioned by any who approach the environmental decision-making process from the perspective of other academic disciplines, or from different stakeholder positions. Since the Exxon Valdez oil spill, and the resulting controversy over valuation methods, many eminent researchers have contributed to the process of developing a better understanding of valuation methods, how to reduce biases associated with their measurement, and how to better employ these estimates in the environmental decision-making process.¹

This book represents a further attempt to contribute to the process of reducing these conflicts by improving valuation methods, reducing biases associated with estimates, and developing an improved understanding of the strengths and weaknesses of contingent valuation and associated methodologies. Despite the progress of others in recent years, this process of refinement and development must be continued. One important reason for this is that the valuation process has become more difficult at the same time it has become more crucial. The question of the times has shifted from the need to measure the damages associated with a specific environmental accident or specific impact on a local environmental resource to more of a focus on system-wide environmental change.

The Exxon Valdez spill generated a flurry of research in valuation methods and in contingent valuation specifically, which significantly contributed to the further development of these techniques. However, while we recognize that much progress was made, in some ways the process was analogous to a nation's military preparing to fight the last war rather than the war of the future. For the most part, research in the 1990s was focused on the development of better estimates for natural resource damage assessment, even though this decade saw system-wide change become more pronounced (or even alarming) with the increased awareness of atmospheric

change, loss of biodiversity, collapse of coral reefs, extensive tropical deforestation, desertification, and global climate change.

At the same time the parameters of environmental change increased the difficulty of producing valid estimates of value, the need for valid estimates also increased. Throughout the world, but particularly in the United States, the political process has dismissed the results of scientific investigation with imprecise conjecture, pseudo-science, and political spin. If well-established results such as the relationship between increased atmospheric concentrations of greenhouse gases and mean global temperature, or the impact of increased arsenic concentrations on human health are dismissed by political spin, where does that leave value estimates based on hypothetical survey questions and statistical analysis of these responses? If the results of contingent valuation and other valuation estimation techniques are to have any possibility of influencing the policy process, they must be sufficiently robust so that they will stand up to both scientific and political contest.

This is the area in which this book tries to make its contribution. The editors and the authors have worked hard to try to improve the understanding of contingent valuation so that it can be used in the decision-making process and to further develop the techniques to improve the validity of the estimates, thereby increasing the confidence by which we can use estimates in the decision-making process.

The book is divided into three main sections. Part I is entitled 'Contingent Valuation and Economic Theory', Part II is entitled 'Econometric and Empirical Issues in Contingent Valuation', and Part III is entitled 'Applications'. Although we have organized the book this way, the chapters tend to make contributions in more than one of these areas.

Part I leads off with Kerry Smith's 'Fifty years of contingent valuation'. This comprehensive chapter summarizes the major developments and contributions of contingent valuation since inception five decades ago. Smith's contribution is followed by John Whitehead's chapter entitled 'Practitioner's primer on the contingent valuation method'. The Whitehead chapter provides an excellent guide for the novice to implement his or her first contingent valuation study. It is also an excellent source of tips and insights for the more experienced contingent valuation practitioner. The next chapter in this section is by John Whitehead and Glenn Blomquist and examines how the results of contingent valuation studies can be used in conjunction with cost-benefit analysis. The next chapters examine contingent valuation from non-neoclassical perspectives. Gregory Cooper looks at the ethical implications of the use of contingent valuation, while Brent Haddad and Richard Horworth examine contingent valuation from an ecological economics perspective.

The second part focuses on statistical and methodological contributions of contingent valuation. The part begins with a discussion of the conjoint analysis methodology, by Steven Stewart and James Kahn. Laura O. Taylor examines how experimental economics can be used to better understand the nature of potential biases associated with contingent valuation. Mary Ahearn, Kevin Boyle, and Daniel Hellerstein examine design issues in the use of contingent valuation to inform a public policy decision, in this case the benefits of improved grassland bird populations due to the Conservation Reserve Program. The next chapter, by Carmelo J. León and Roberto León, discusses how Bayesian techniques can improve the process of hypothesis testing in contingent valuation. The part concludes with a chapter by Paul Jakus, which provides a discussion of ways to develop better value estimates when research budgets are restricted.

The third part focuses on applications, although many methodological insights are provided in these application chapters. The first chapter in this part is by Hale Thurston and looks at the application of contingent valuation methods using internet tools. Next, John Loomis uses contingent valuation to examine the value of wildlife and habitat preservation. Todd L. Cherry, Jason F. Shogren, Peter Frykblom, and John A. List are the authors of the next chapter, which focuses on the difficult task of measuring the value of endangered species. The next three chapters focus on the application of valuation methods in developing countries. Christine Poulos, Maureen Cropper, Julian Lampietti, Dale Whittington, and Mitiku Haile look at the use of contingent valuation to measure the benefits of a public health program, focusing on the provision of insecticide-treated mosquito nets. James Casey's chapter provides another example of conjoint analysis, using a case study that examines the value that subsistence farmers place on participation in agroforestry schemes. Dan Biller, Karoline Rogge and Giovanni Ruta provide a quantitative analysis of a set of contingent valuation studies in developing countries. The final group of chapters in this part look at contingent valuations studies of toxic substance problems. William Breffle, Edward Morey, Robert Rowe, and Donald Waldman look at the problem of PCBs and fish consumption advisories, while Richard Carson and Robert Cameron Mitchell look at trihalomethanes and public perceptions towards risk.

Note

1. For a good summary of these contributions, see Smith's Chapter 2 of this book.