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## Using Surveys to Value Public Goods: The Contingent Valuation Method

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## USING SURVEYS TO VALUE PUBLIC GOODS: THE CONTINGENT VALUATION METHOD

ROBERT CAMERON MITCHELL, RICHARD T. CARSON

Washington: Resources for the Future. 1989.

Pp. xix, 446. \$45.00 cloth.

This long anticipated work on the contingent valuation method by Mitchell and Carson was well worth the wait. In addition to being the most up-to-date review of empirical work, the authors provide the reader with a well-organized description of the important differences between direct versus indirect methods of valuing public goods, and between data based on observed market behavior versus hypothetical markets. Their definitions of the often confusing world of (quasi) public and (quasi) private goods versus club goods, and use versus non-use benefits, are concise and illuminating.

Mitchell and Carson's greatest potential contribution to the literature on contingent survey design, however, is their advocacy of a particular property rights approach combined with the use of a referendum format with open-ended elicitation for the valuing of public goods whose provision requires continuous expenditures. Their property rights approach for such goods is that willingness to pay correctly measures Hicksian compensating variation for *both* increases and decreases from the current levels of provision. They argue that the referendum (single response) style, as opposed to the iterative method, is the most appropriate form of question because its similarity with the yea-nay nature of voting for such goods enhances the reliability of the data (i.e. reduces what historically has been identified as hypothetical bias). Finally, Mitchell and Carson's recommendation to value public goods in general by the open-ended elicitation method—where the respondent is asked to come up with a valuation—rather than closed-ended method—where the interviewer states values to which the respondent reacts—is based on the view that starting point bias is the most likely source of systematic errors in contingent valuation data. Their reasoning on this point is as follows. The closed-ended procedure is, as the authors admit, incentive-compatible with truthful revelation of willingness to pay. It has the disadvantage, however, of increasing the likelihood of a starting point bias introducing systematic errors in the data. The open-ended method, on the other hand, avoids starting point bias but is not incentive compatible. But, it may still be better to use an open-ended elicitation method if starting point bias represents the more likely source of biased estimates of willingness to pay.

The survey design for public goods requiring a maintenance expenditure consistent both with Mitchell and Carson's view of property rights, and

with their recommendation to use the open-ended referendum questions, is one in which individuals would simply be asked to state their *maximum* willingness to pay for either an increase or decrease in the level of provision without being given any specific amounts to respond to by the interviewer. Thus, the import of Mitchell and Carson's property right approach is that it justifies avoiding the willingness to accept compensation questions which have generally yielded much larger values than willingness to pay questions. Their property right approach, therefore, represents an attempt to resolve the dilemma for those comparing the welfare effects of reductions versus increases in the current level of public good provision. The significance of the recommendation to use a referendum format for questions is that it facilitates the extension of contingent methods beyond field surveys to mail surveys. Finally, Mitchell and Carson's suggestion to use open-ended questions—if adopted—would impact on the importance of work in discrete choice and maximum likelihood estimation procedures that have sought to improve estimates based on data from closed-ended questionnaires.<sup>1</sup>

Every good review is, of course, expected to make some criticisms. The definitions concerning (quasi) private, club, and (quasi) public goods could have been enhanced by the inclusion of a comparison with common property resources. This reviewer would also have appreciated a more thorough discussion of referendum survey design. A somewhat more substantive criticism applies to the field and experimental evidence quoted concerning persistent differences between WTP and WTA. Some of this evidence pertains to (quasi) private or club goods rather than (quasi) public goods—a fact that the authors at times do not make entirely clear. Since the purpose of the book is to discuss valuation of public goods, it is questionable whether results from field surveys or experimental studies on (quasi) private or club goods should be referenced without at least making it unambiguous to the reader. This point applies to the use of evidence from simulated markets as well, since such markets are generally restricted to (quasi) private goods. Also, Mitchell and Carson's suggestion that willingness to pay be used to value public goods that require an expenditure to maintain is controversial because it implies that society's vested rights to items such as environmental amenities extend only to the level of provision associated with zero opportunity costs.

Finally, an important criticism of Mitchell and Carson's work concerns the evidence for their contention that starting point bias is the most likely source of significant systematic errors in contingent surveys. Referring to the relative importance of starting point bias versus strategic bias as a

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1. See, e.g., Hanemann, *Welfare Evaluations in Contingent Valuation Experiments with Discrete Responses*, 66 Am. J. Agric. Econ. 332-41 (1984); Cameron & James, *Efficient Estimation Methods for Use with "Closed-ended" Contingent Survey Design*, 69 Rev. of Econ. and Stat. 269-76 (1987); Cameron, *A New Paradigm for Valuing Non-market Goods Using Referendum Data: Maximum Likelihood Estimation by Censored Logistic Regression*, 15 J. of Envtl. Econ. and Mgmt. (1988).

source of systematic errors, Mitchell and Carson state that "Over the course of the past decade experimentalists have consistently disproved the strong [free rider] version, while their findings in regard to the weak version indicate a crucial difference between divisible public goods and those that are indivisible . . ." since under the latter "even the weak free-rider hypothesis receives little support" (p. 136). It is unclear, however, how the authors distinguish between divisible public goods versus club goods, and how they reconcile their concept of divisible public goods with their earlier definition of public goods in general as those where exclusion is impossible (p. 57). The theoretical discussion of the sources of systematic errors, being largely restricted to vehicle, starting point, and strategic biases also appears somewhat incomplete. For example, although the authors recognize that provision of public goods may be perceived as contingent on aggregate bids equaling the costs of the good (pp. 252, 255),<sup>2</sup> such cases are not integrated into the general discussion concerning systematic errors in valuing public goods.

The increasing popularity of referendum surveys notwithstanding,<sup>3</sup> Mitchell and Carson's argument that an open-ended referendum design be used for valuing public goods that have continuous maintenance costs contrasts sharply with other recommendations made recently. These recommendations have been to employ an iterative, closed-ended format instead.<sup>4</sup> Similarly, the authors' suggestion that the welfare effects of a reduction in the level of provision of such goods be measured by a consumer's willingness to pay for avoiding decreases differs from the recommendations of these same authorities that the effects be measured by willingness to accept compensation. Thus, the long run impact of Mitchell and Carson's book may hinge to a great extent on whether their views concerning property rights and the relative threat posed by starting point bias is supported by subsequent theoretical and empirical work.

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2. See, e.g., Knetsch & Davis, *Comparisons of Methods for Recreation Evaluation*, in *Water Res.* (Kneese & Smith, eds. 1966); Brookshire & Coursey, *Measuring the Value of a Public Good: An Empirical Comparison of Elicitation Procedures*, 77 *Am. Econ. Rev.* 554-66 (1987).

3. See, e.g., Sellar, Stoll & Chavas, *Valuation of Empirical Measures of Welfare Change: A Comparison of Nonmarket Techniques*, 61 *Land Econ.* (1985); Freeman, *On Assessing the State of the Arts of the Contingent Valuation Method of Valuing Environmental Changes*, in *Valuing Environmental Goods: An Assessment of the Contingent Valuation Method* (Cummings, Brookshire & Schulze, eds. 1986).

4. See, e.g., Water Resource Council, *Principles and Guidelines for Water and Related Land Resources Implementation Studies* (1983); Cummings, Brookshire & Schulze, *The Contingent Valuation Method*, in *Valuing Environmental Goods: An Assessment of the Contingent Valuation Method* (Cummings, Brookshire & Schulze, eds. 1986).