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Citizen valuation juries

Excerpt from draft SAB Committee report, *Valuing the Protection of Ecological Systems and Services*: *In contrast to initiatives and referenda, citizen valuation juries measure stated rather than revealed value. They also incorporate elements of the deliberative valuation process (see chapter 5). The jury is given extensive information and, after a lengthy discussion, usually asked to agree on a common value or make a group decision. To date, citizen juries have typically been asked to develop a ranking of alternative options for achieving a given goal. Although citizen juries have been used in other contexts, experience using citizen juries for ecological valuation is very limited. Nonetheless, in principle, a jury could be asked to generate a value for how much the public would, or should, be willing to pay for a possible environmental improvement, or, conversely, willing to accept for an environmental degradation. In contrast to estimates of willingness to pay derived from economic valuation methods, the estimates from citizen juries would not reflect the budget constraints of the individual participants and would reflect community-based values rather than economic values. To the extent that a citizen jury engages in group deliberation, resulting value estimates also would reflect constructed values.*

Further reading

- Aldred, J., and M. Jacobs. 2000. *Citizens and wetlands: Evaluating the Ely citizens' jury*. *Ecological Economics* 34: 217-232.
- Alvarez-Farizo, B., and N. Hanley. 2006. *Improving the process of valuing non-market benefits: Combining citizens' juries with choice modelling*. *Land Economics* 82: 465-478.
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- Kenyon, W., and C. Nevin. 2001. *The use of economic and participatory approaches to assess forest 49 Development: A case study in the Ettrick Valley*. *Forest Policy and Economics* 3: 69-80.
- Macmillan, D.C., et al. 2002. *Valuing the non-market benefits of wild goose conservation: A comparison of interview and group-based approaches*. *Ecological Economics* 43: 49-59.
- McDaniels, T.L., et al. 2003. *Decision structuring to alleviate embedding in environmental valuation*. *Ecological Economics* 46: 33-46.

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O'Neill, J., and C.L. Spash. 2000. Appendix: Policy research brief: conceptions of value in environmental decision-making. Environmental Values 9: 521-536.

Description of the Method. Another potential process for attempting to measure the social/civic value of changes to ecological systems and services is to assemble and query a representative group of citizens (a “citizen jury”). The major use of citizen juries to date in environmental decision making has been to help governments rank options for achieving particular goals, e.g., reducing traffic in an urban area (Kenyon, et al. 2001). Citizen juries also can be used to measure the value of changes to ecological systems and services along a variety of different metrics. Information obtained during ranking deliberations, for example, can provide valuable insights for other valuation exercises (Aldred & Jacobs 2000). Citizen juries also have been combined with choice modeling to determine paired rankings of various ecological characteristics (Alvarez-Farizo & Hanley 2006).

Although citizen juries have generally been used to rank governmental options rather than to determine monetary values, citizen juries can also be asked to determine either a social/civic willingness to pay (“public WTP”) or a social/civic willingness to accept (“public WTA”) for any particular ecological change (Blamey, et al. 2000). For public WTP values, citizen valuation juries can be asked to determine the highest levy, tax, or other form of payment that the government should pay to obtain a particular ecological benefit. For public WTA values, citizen valuation juries can be asked to determine the highest monetary sum that the government should accept to avoid a particular ecological loss.

When asked to determine public WTP or public WTA, citizen juries bear both similarities to and differences from initiatives and referenda and contingent valuations. Like initiatives and referenda, citizen juries provide information on social/civic values, but they measure stated rather than revealed value, and they incorporate elements of the “deliberative valuation” processes described earlier in this section. Citizen valuation juries are also similar to contingent valuation surveys except that: a) juries are asked to determine how much the public should pay or accept in compensation for a specified ecological change (rather than being asked how much they would pay or accept as individuals); b) valuation juries are often asked to agree on a common value for the ecological change (rather than being asked for individual values that the expert then aggregates or otherwise combines); c) juries deliberate together as a group before

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determining value; and d) juries are provided with more extensive information about the ecological change and can be aided in their deliberations.

Although there is little experience using citizen juries to determine public WTP or public WTA, a number of governmental and academic experiments have examined the appropriate use of citizen juries to inform various governmental choices more generally. The process of forming and utilizing citizen juries has varied widely. In the typical situation, a small group of citizens, typically ranging from a cross-section of 12 to 20 persons, has been drawn from the relevant population. Approaches have differed as to how best to choose the jurors. Given the small size of citizen juries, there is an inevitable tension between choosing jurors to reflect the demographic characteristics of the relevant population as a whole and choosing jurors that represent the interests of major stakeholders. Although larger juries would reduce some of the tensions involved in juror selection, larger juries are likely to find it more difficult to reach agreement within a realistic time frame. Most citizen juries to date have been chosen using random sampling or stratified random sampling (Blamey, et al. 2000).

Once a citizen jury is chosen, the jury then meets and deliberates over a multi-day period, during which it hears and questions expert witnesses, deliberates in small and large groups, and agrees on a final recommendation to the sponsoring governmental body. These group deliberations allow jurors to hear alternative perspectives, test ideas, and carefully work through the valuation exercise. Several different techniques are used to provide information to the jurors. In some cases, the government or an expert facilitator chooses what information to provide to jurors, while in other cases, relevant interest groups make individual presentations to the jury. Jurors also can be permitted to request information and pose questions directly to expert witnesses (Blamey, et al. 2000). Two factors should guide choices among the processes for providing information to the jurors: a) ensuring that jurors have all the information that they believe is valuable to their valuation exercise; and b) ensuring that the information is balanced and not biased toward any particular result. Another important choice in designing a citizen jury is the process by which the jury will make decisions. In most cases, juries are asked to arrive at a group decision. Decision making rules in this context include a simple majority vote of the jury, consensus (where a majority favors the valuation and no juror opposes it), and unanimous agreement. Citizen juries also do not need to produce a collective value. In some experiments,

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for example, juries deliberate as a group, but members of the jury then report their valuations on an individual basis (Alvarez-Farizo & Hanley 2006). Researchers can then combine individual valuations into an overall evaluation. Measures of central tendency (means or mediums of the valuations provided by the individual jurors) can be used to develop a valuation measure in this context.

Experiments indicate that citizen juries often produce significantly different valuation results from economic or socio-psychological surveys. The additional information available to jury members, the opportunity to spend time thinking about the appropriate valuation, and the stress on collective rather than individual values all appear to generate significant changes in valuation (Alvarez-Farizo & Hanley 2006). The jury's valuation of particular ecological improvements, however, can either increase or decrease compared to the results obtained through economic surveys (Alvarez-Farizo & Hanley 2006).

Because contingent valuation methodology and other traditional economic measurement approaches seek a very different valuation than citizen valuation juries, juries should not be seen as a substitute for the traditional approaches. Governmental agencies should employ citizen valuation juries as a supplement to traditional economic valuation approaches. When deciding whether to pursue particular regulations or other governmental actions, agencies should consider estimates of both private and public value, along with the strengths and weaknesses of each approach.

EPA might also consider using some elements of the citizen jury approach to improve other valuation methods. Some researchers have investigated other group-based approaches out of concern, for example, about whether contingent valuation surveys provide sufficient time and information for survey respondents to generate reliable estimates of the value of often complex ecological changes. Under the "Market Stall" ("MS") approach, for instance, researchers meet with survey subjects in two one-hour meetings, separated by a week, and encourage the participants to discuss their valuations with household members and friends between the two sessions. Unlike citizen valuation juries, the MS approach asks survey subjects for their personal valuations, based on individual preferences and incomes, rather than social/civic valuation. Respondents are asked for their personal valuations in a confidential written survey at the end of the second meeting. In Macmillan, et al. (2002), the WTP measures obtained through the MS

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approach were significantly lower than the WTP measures generated from CV interviews, which is consistent with other studies that show a decline in WTP when survey subjects are provided additional time to consider their answers (Whittington, et al. 1992).

Text Box 1: A Valuation Exercise Illustrating Use of Citizen Juries

In one experiment, a citizen jury was used to examine the economic value of the control of a particular exotic weed, Bitou Bush (*Chrysanthemoides monilifera* L. Norl. ssp. *rotundata*), in an Australian national park (James & Blamey 2000). A jury of 14 was selected, using a two-phase telephone survey, in order to be representative of the New South Wales population on the basis of gender, age, place of residence, rating of the environment in relation to other social issues, occupation, income, income source, and education. The jury met for three days during which they heard and questioned seven expert witnesses. Prior to the hearings, jurors received training in note taking and questioning of witnesses, in order to maximize their ability to use the information provided.

In one of the charges, the jury was given two options: (Option #1) the then-current situation in which weeds were controlled on 3000 hectares per year, and (Option #4) an alternative management regime in which weed control would be expanded to 9600 hectares per year. The jury was then given the following charge: “How high would a park management levy have to be, before the jury would recommend Option 1 rather than Option 4 ...? In other words, how high would the levy have to be before the ... public would be no better off under Option 4 than Option 1?” The jury first decided that a progressive levy, calculated as a percent of gross income, was most appropriate. After discussing two proposed levies (0.1% and 0.25%), the jury voted eight to two in favor of a levy of 0.1%. In a survey following the jury exercise, jurors reported that they found the valuation exercise to be both interesting and worthwhile.

Relation of Method to the C-VPESSE Expanded and Integrated Framework. Citizen juries are potentially useful both to identify socially important assessment endpoints and to attach a value, monetary or socio-psychological, to changes in the assessment endpoints. Use of this method relates to steps 3 and 5 of the C-VPESSE proposed valuation process (**Error! Reference source not found.**).

Because citizen juries consist of representative members of the public, citizen juries also expand the role that the public plays in valuations of changes in ecological systems and services. Members of citizen juries actively evaluate information regarding changes, are permitted to ask

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questions of experts, and consciously deliberate over the appropriate social/civic value of the change.

Status as a Method. As discussed earlier, citizen juries have been used primarily to help governments rank options for achieving particular goals. Only a few efforts have been made to date to use citizen juries to generate monetary or other estimates of the social/civic value of environmental changes. Use of citizen juries for direct valuation of changes to ecological systems and services, therefore, should be considered experimental for the moment and should not be used to make significant governmental decisions until further research has been conducted on both the efficacy of the process and the appropriate jury processes. Given the potential use of citizen juries to evaluate social/civic values, however, this is an area in which research can be valuably focused. EPA may wish to use citizen juries on an experimental basis, moreover, to provide a comparison to valuations obtained through traditional economic valuation methods.

Strengths/Limitations. One of the major strengths of a citizen valuation jury is that, like referenda and initiatives, the citizen valuation jury incorporates public-regardness. Jurors are asked to provide a valuation based on the perceived impact of an ecological change on the entire community rather than on his or her individual preferences alone. Citizen valuation juries thus incorporate a broader concept of value than standard contingent valuation approaches and place the jurors in a position similar to that of the governmental decision makers who are being advised.

Citizen valuation juries avoid a number of potential concerns regarding referenda and initiatives as a source of social/civic valuation information. First, the jury process ensures that juries receive more information regarding the ecological change than most voters receive prior to voting on an initiative or referendum. Second, because the jury evaluation process can be carefully structured, citizen evaluation juries are less subject to undue influence from political interest groups than are votes on referenda and initiatives. Finally, there are a limited number of referenda and initiatives from which valuations can be derived, while citizen valuation juries can be asked to assess a valuation for any ecological change. Unlike referenda and initiatives, however, citizen juries do not have standing as actual, official decision making bodies for their communities.

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Citizen valuation juries build on a well-established legal institution in the United States – the criminal and civil jury system. The legal system uses juries to decide whether to initiate criminal prosecutions, determine guilt and innocence in criminal cases, decide between life and death in capital cases, and assess damages in often complex civil cases. Most adult members of the public have served as jurors, understand the importance of the role they assume, and act deliberately and responsibly.

Citizen valuation juries suffer from the hypothetical character of all stated-value methods of valuation. Because the juries do not themselves determine governmental policy, the juries may not reveal what they actually believe to be the social/civic value of an ecological change. The hypothetical character of jury valuations could be eliminated by providing that the valuations will directly determine whether particular governmental actions will be taken, but the government is unlikely to want to (or be legally able to) delegate its decision making powers to citizen juries. Despite concerns over hypothetical inquiries, experiments with citizen juries indicate that jurors approach their valuation task in a responsible fashion and reach well-thought-out conclusions (Aldred & Jacobs 2000).

Citizen juries also raise a number of other unique concerns. Some economists, for example, have worried that group dynamics and “norms” might reduce the reliability of jury decisions. Some jurors, for example, might not wish to be perceived as disagreeing with others, while some jurors may be able to dominate the discussion and result. Some jury experiments, however, have suggested that the design of the jury process can avoid such jury dynamics (Macmillan, et al. 2002). Trained facilitators may be able to overcome any structural pathology that might otherwise arise and should be involved in any valuation exercise involving citizen juries.

As discussed earlier, the choice of jurors also poses difficulties. Because of the small size of typical citizen juries, a demographic cross-section of the public may not adequately represent all interest groups. Choosing representatives of different interest groups to serve on citizen juries, however, may yield a jury that does not adequately represent demographics. Small citizen juries, moreover, will inevitably fail to fully represent the public as a whole. In order to ensure that jurors are other-regarded, experiments suggest that the government should choose a jury that is as demographically representative as possible (typically through stratified random

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sampling), so that the jury is at least symbolically representative, and then instruct the jury to adopt an impartial stance in its deliberations (Brown, et al. 1995, Blamey, et al. 2000).

Treatment of Uncertainty. The use of citizen juries to value changes in ecological systems and services raises many of the same uncertainties as traditional methods of economic or socio-psychological valuation. The small size of citizen juries, however, raises an additional uncertainty factor.

Research Needs. Because there is little experience with the use of citizen juries to directly value changes in ecological systems and services, further research is needed on a variety of topics before EPA should consider adopting the approach to develop social/civic valuations for decision making purposes on other than an experimental basis. Key questions include:

- Do citizen valuation juries arrive at different valuations than individual respondents to CV surveys? If so, how and why do the valuations differ?
- How stable are valuations provided by citizen juries? How much variation exists among the valuations produced by different citizen juries?
- How do jury selection processes affect the valuations of the jury? What methods exist to overcome the inevitable bias arising from the small size of citizen juries?
- How should information be provided to citizen valuation juries? What are the advantages and disadvantages of highly structuring the information that is provided to a jury, versus permitting the jury to determine the information that it receives?
- How do decision making rules (e.g., consensus versus unanimity) affect valuations? What are relevant considerations in choosing among the different decision making rules?

Key References

- Aldred, J., and M. Jacobs. 2000.. Citizens and wetlands: Evaluating the Ely citizens' jury. *Ecological Economics* 34: 217-232.
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