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ANALYSIS

First impressions count: interviewer appearance and information effects in stated preference studies

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Abstract

A simple but novel experiment is described examining the impact of interviewer appearance upon stated willingness to pay (WTP) for an environmental good. This test consists of an interviewer wearing either formal or more casual clothing. This analysis is interacted with a cross cutting treatment examining the impact well known of adding information on certain of the less familiar attributes of the good in question. Face-to-face interviews are employed to collect a sample of respondents who are randomly allocated to one of the four treatment permutations described by our interviewer appearance and information change study design. Our analysis suggests that both altering the appearance of an interviewer and changing the degree of information provided can have significant impacts upon stated WTP. Furthermore this effect is heightened when both effects are running in parallel. We argue that such findings are to be expected given the highly interactive nature of face-to-face interviewing but note that this serves to provide a cautionary note regarding the complex array of influences at work when members of the public are asked to express preferences regarding goods for which they have not previously provided monetary values.

Keywords: Stated preference; Contingent valuation; Willingness to pay (WTP); Interviewer effect; Appearance; Information effect

1. Introduction

Stated preference techniques such as contingent valuation (CV) and choice modelling (CM) dominate empirical research into the monetary valuation of preferences for non-market goods such as those provided by the environment. Indeed the use of such survey based methods is increasingly becoming an accepted and widely incorporated element of practical decision making processes (Champ et al., 2003; Bateman et al., 2002). However, there remains substantial differences of opinion (and a considerable lack of understanding) regarding the extent to which contextual issues may influence the ways in which survey respondents formulate answers to the questions posed in such valuation surveys. While economic theory tends to say little regarding such contextual influences, psychologists make considerable play of the affective heuristics which may be brought into play in such situations. This paper presents evidence of a significant, yet previously unstudied, phenomena within valuation surveys; the impact which an interviewers appearance may have upon willingness to pay

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(WTP) estimates. This is combined with an analysis of a relatively frequently observed effect that arises from varying the information given to respondents concerning the good under evaluation.

The paper is organised as follows. In the next section we examine that evidence which is available regarding the impact of interviewers within the valuation elicitation process and consider selected previous studies of information effects. Hypotheses regarding the effects under consideration are formulated in the following section, which also considers the joint impact of these effects. Details of our empirical study are then presented after which results are provided. These are then discussed and final conclusions are drawn.

2. Interviewer effects

From the perspective of economic theory there is no clear reason why the same question posed by differing interviewers should elicit differing responses from a survey respondent. Perhaps as a consequence of this expectation, few CV studies have tested for interviewer effects. However, of those that have, a number of studies report at least some evidence of significant effects.[1] In one of the earliest of these tests, Desvousges et al. (1987) find significant impacts upon stated WTP associated with two of the eight interviewers employed in their seminal CV study of water quality in the Monongahela River.[2] Similarly, Boyle and Bishop (1988) observe significant interviewer effects upon mean WTP to avoid degradation of scenic beauty elicited from both payment card and dichotomous choice response formats. In an interesting variant of such analyses, Walsh et al. (1990) compared WTP responses gathered by four interviewers with varying degrees of experience in economics. They found that the WTP responses elicited by an interviewer with no economics experience were on average 24% lower than those obtained by other interviewers, all of whom had some training in economics. Even these substantial effects are dwarfed by those reported by Mannesto and Loomis (1991) who compare stated WTP sums elicited by experienced and less experienced interviewers for two recreational boating goods. For both goods mean WTP was substantially higher when elicited by experienced interviewers ($69.80 and 59.27) than when obtained by less experienced interviewers ($37.12 and 39.47, respectively). Testing revealed these differences to be statistically significant ($P=0.012$). It is interesting to note that the direction of these effects is consistent for both goods with higher WTP amounts being offered to more experienced interviewers.

The above tests of interviewer effects all focus upon potential impacts arising between differing interviewers. However, the Mannesto and Loomis findings suggest that, given that interviewers implementing a given study treatment ask the same questions within identical formats, there may be something about the demeanour of an interviewer which triggers certain, possibly affective (Slovic et al., 2002), responses in survey respondents. The likelihood of such effects arising in the survey situation, particularly within in-person interviews, has long been recognised by psychologists (Orne, 1962). However, it has only been more recently that such psychological insights have been brought to bear within the design and execution of CV studies (Harris et al., 1989; Schkade and Payne, 1994).

The present study considers a single, readily controllable aspect of the interviewer–respondent interaction by simply varying one element of the interviewer's affective impact upon the respondent; namely what the interviewer is wearing during the time the survey is undertaken. While this may at first seem trivial, there is a serious methodological issue under investigation here. Psychological insights into the survey process suggest that, when faced with a task which is unfamiliar, an individual will seek to gain clues regarding the purpose and consequentiality of that task (Orne, 1962). A variety of heuristics may be used to assess this situation including an individual's subjective assessment of the interviewer. In cases where the interview is deemed to be of high esteem then it is likely that the perceived consequentiality of CV survey responses may be enhanced (Harris et al., 1989). The visual appearance of the interviewer, as

[1] This is not always the case. Loomis et al. (2000) fail to find significant interviewer effects in WTP bids for restoring ecosystem services within an impaired river basin.

[2] It should be noted that this effect cannot be unambiguously attributed to the interviewers involved as they were allocated to different survey areas, i.e. this could reflect an omitted variables issue.

perceived by the respondent, may well be a factor in this affective assessment. Given this account of the subjective formation of CV responses, we might hypothesise that changes in that appearance could, feasibly, impinge upon the perceived consequence of those responses and hence upon elicited WTP estimates.

3. Information effects

Unlike appearance effects, theory recognises that changes in the level and type of information supplied to individuals in a valuation exercise may, in certain circumstances, quite reasonably be expected to have some impact upon resultant values for the good in question (Mitchell and Carson, 1989; Munro and Hanley, 1999). This effect is quite separate from any psychological impact, which that information may have upon the perceived framing of the question.[3] Cameron and Englin (1997) find that differing degrees of respondent experience and understanding were associated with significantly differing levels of WTP. This suggests that information effects are likely to be strongest for goods for which respondents do not have clear prior preferences (e.g. goods with significant non-use elements). In such cases, positive information (i.e. that which emphasises desirable attributes) regarding a good is likely to significantly increase stated values for that good (as demonstrated by Bergstrom and Dillman, 1985; Bergstrom et al., 1989).[4] Similarly, while positive information concerning complements may raise WTP for goods, informing respondents about desirable attributes of substitutes can lower stated values for the good in question (as shown by Whitehead and Blomquist, 1991).[5] However, by the same logic, such information effects are likely to be more muted for predominantly use-value goods with which the respondent is highly familiar and hence holds prior values (see, for example, Boyle, 1989; Boyle et al., 1991).[6] In effect therefore, the presence or absence of significant information effects is likely to be an empirical matter peculiar to the type of good, respondent and information characteristics of each application. More substantial effects are to be expected for goods or attributes regarding which the respondent does not have extensive previous knowledge or prior formulated values.

4. Hypotheses

The above discussions may be formalised into a set of readily testable hypotheses. With respect to the effects of interviewer appearance upon stated WTP we can formulate the following:

H_0^a: interviewer appearance will have no impact;
H_1^a: interviewer appearance will have an impact.

As noted above, prior investigations of interviewer effects within CV studies have focussed exclusively upon effects observed between interviewers. In this study we present a first analysis of the possibility of within-interviewer effects arising solely from changes in the appearance of an interviewer. As highlighted by Hanemann (1996), economic theory often fails to provide a clear guide to expectations. Nevertheless, we will start with the 'straw-man' expectation that

[3] See, for example, Thaler (1980) or Slovic et al., (1982).

[4] Bergstrom and Dillman (1985) employ a split sample approach to test the impact upon stated values for prime-land preservation of adding information on environmental and visual amenity impacts. A sub-sample presented with such information provided significantly higher WTP responses than a control group which was not exposed to this information. Bergstrom et al. (1989) note that compared to a control group, significantly higher WTP sums were stated by subsample presented with additional information concerning (amongst other items) the scenic and isolation attributes of a recreational fishing experience. Note that not all tests of such non-use value elements yield significant information effects. Samples et al. (1986) comparing responses found that adding positive information regarding an endangered species (the humpback whale) increased sample mean WTP by between 20 and 33%. However, statistical tests showed that while this difference was not significant at the 10% level.

[5] This study also concerns a primarily non-use good; wetlands in Kentucky.

[6] Boyle (1989) examines anglers WTP for brown trout fisheries in Wisconsin finding no significant difference between mean WTP statements for three levels of information (although bid variance fell significantly as information increased suggesting that scenario uncertainty was reduced across these treatments). Similarly, Boyle et al. (1991) in a study of hunting in Maine, found that the addition of information concerning other use–value attributes (prices of substitute species) did not significantly impact upon stated WTP sums.

basic economic intuition might lead us to expect that H_0^a should not be rejected and return to this issue in our discussions and conclusions to this paper where we reconsider whether such an expectation is indeed appropriate. Psychological accounts of the affective properties of interviewer–respondent interaction within a survey setting also mean that expectations are not clear-cut. However, we might expect that, if changes in appearance can enhance the esteem within which the interviewer is held by the respondent then this may increase perceived consequentiality of the CV exercise and result in higher WTP bids.

Turning to consider information effects, again a null and alternative hypothesis may be formulated as follows:

H_0^i: additional information will have no impact upon WTP;
H_1^i: additional information will have an impact upon WTP.

Following our discussion of pertinent literature given above, we can see that economic theory again fails to yield unequivocal guidance regarding the expected outcome of any test of these hypotheses. However, empirical evidence suggests that significant information effects can occur. More specifically, where that information is non-negative (i.e. it does not highlight disutility aspects of the good) then it is likely to raise WTP particularly for less familiar, non-use goods. However, rather than pre-empt the direction of any effects we retain a two tail approach to testing this all hypotheses throughout this paper.

Finally we can formulate a hypothesis concerning the joint impact of interviewer appearance and information effects as follows:

H_0^j: there will be no joint interviewer appearance and information effect upon WTP;
H_1^j: there will be a joint interviewer appearance and information effect upon WTP.

Given our discussion of preceding null hypotheses, theory provides no clear prior expectations regarding H_0^j, which remains an open empirical question. However, given our previous speculations regarding the direction of interviewer appearance and information effects (should they be observed), it seems reasonable to hypothesise that, when the interviewer is dressed more formally and additional information is provided, these combined effects will result in WTP amounts which are higher than under any of the single effect scenarios outlined above. Conversely, when the interviewer is dressed informally and additional information is not provided then we might expect that lower WTP amounts will be recorded.

5. Study design

The hypotheses under investigation were assessed through a CV survey of visitors to a Forestry Commission (i.e. State operated) multipurpose woodland at Grizedale, UK. The survey instrument was a simple adaptation of a previously tested woodland visitor CV questionnaire developed by Bateman and Langford (1997). Survey respondents were asked to state their WTP per annum for a woodland conservation scheme to be paid via an annual taxation payment vehicle. Given the exploratory nature of this experiment a simple open-ended (OE) elicitation format was used. Such a format has been criticised in terms of its incentive compatibility properties which critics argue are liable to result in problems such as free-riding (Carson et al., 1999). We have argued elsewhere that, because of possible problems such as free-riding, OE formats would not be desirable for yielding estimates for incorporation within CBA or similar economic appraisals (Bateman et al., 2002). However, incentives remain constant across the various experimental treatments outlined below. Given this, the highly efficient nature of the OE question makes such formats particularly attractive for experimental purposes where tests concern comparisons between groups. Given that all tests concern relative rather than absolute WTP values; such a format seems defensible for such experimental investigations. Details of the information given to respondents are provided subsequently and the full questionnaire is reproduced in Bateman and Mawby (2003).

The unique nature of our interviewer effect hypothesis H_0^a means that, unlike preceding studies in this area, we are not concerned with effects arising between interviewers. Consequently we undertook all of the sampling for the present study using a single interviewer. The change in appearance was affected

using a simple but striking change in dress on alternate days throughout the entire survey period. For half of the survey days the interviewer (who was a 23-year-old male) wore a well tailored navy blue business suit, white full length shirt, tie and black leather shoes. For alternate days the same interviewer wore a T-shirt, knee length denim shorts and white trainers. All items of clothing were clean and well pressed throughout the survey.

The interviewer was given extensive training in CV survey techniques including repeated pilot interviews (accompanied by the lead author). While the interviewer was told that the study was obviously examining the effect of appearance[7] and information changes, the training process strongly emphasised the need to ensure that, in all other aspects, all interviews should be absolutely identical. While the interviewer had prior experience of survey research, he had not previously gathered information for a CV survey. It was felt that this would enhance the neutrality of other aspects of the interview experience, ensuring it was professionally carried out without reference to the study dimensions laid out above.

In order to address H_0^1, two sets of information were prepared. Given the evidence of the papers reviewed previously, it seems most likely that significant information effects would be observed with respect to the less familiar, non-use aspects of a good rather than regarding more familiar, use value items. Consequently, in describing the woodland, while one group of respondents were not informed about the various species for which the area provided habitat, the information provided to other respondent specifically mentioned that Red Squirrel, Badgers, Red Deer and Tawny Owl all lived in the wood and showed respondents pictures of all of these species. This latter 'High Information' group was also shown a map of walks in the wood and told of a Woodland Art Gallery, details of which were withheld from the other 'Low Information' group.[8] Given our literature review, the addition of both use and non-use value information was expected to induce an elevation in the values stated by the former group.

From the above it can be seen that we have a typical four cell study design, with two interviewer appearance treatments overlaid upon two information type treatments. Respondents were randomly allocated to one of these four treatment permutations which for convenience we can label as follows:

FLO, formal appearance (suit worn), low information scenario;
CLO, casual appearance (suit not worn), low information scenario;
FHI, formal appearance (suit worn), high information scenario;
CHI, casual appearance (suit not worn), high information scenario.

Sampling was undertaken through a face-to-face interview with visitors to Grizedale Forest, with respondents being selected upon a next-to-pass basis. Aside from the information statements and WTP question, the survey instrument elicited a typical range of standard socio-economic and demographic data as detailed in the questionnaire reproduced in Bateman and Mawby (2003). This was primarily used to ensure that the random allocation of respondents to treatments had produced sub-samples, which were not significantly different from each other along lines other than those induced by study design. We now turn to consider findings derived from the resultant responses.

6. Results

A total of 306 visitor parties were interviewed. Random allocation of these respondents across our

[7] However, note that the interviewer was not told about the expected direction of effect. Instead he was told that either direction was plausible (respondents may react positively or negatively to more formal dress) or that no effect might be observed. The stress throughout was upon ensuring that, in all other respects, interviews should be identical. Of course it would be difficult to categorically rule out the possibility of some subconscious change in interviewer behaviour in line with changes in appearance.

[8] Note that, in an ideal experimental framework the quantity of information given to both groups should be made identical by providing the Low Information group with sufficient irrelevant information to ensure that the questionnaires are identical in length (as per Samples et al., 1986). However, irrelevant information may of itself have some impact upon resultant valuations (e.g. respondents may become annoyed by the process) and such devices are difficult to operationalise in the field.

Table 1
Summary WTP results and parametric tests

Information level	Interviewer appearance	
	Casual (C)	Formal (F)
Low (LO)	**£ 13.66**; {10.00}; *12.27;* (10.56–16.04); <77>	**£ 24.47**; {15.00}; *27.96;* (18.99–31.54); <75>
High (HI)	**£ 19.36**; {15.00}; *19.62;* (15.73–23.73); <77>	**£ 32.29**; {25.00}; *29.42;* (27.14–39.69); <77>

Bold, Mean WTP per household per annum (including non-payers as zeros: exclusion of non-payers makes no difference to the significance of differences between cells); {}, Median; *Italics*, Standard deviation; (), Bootstrapped 95% confidence intervals around mean WTP derived from parametric bootstrap with 500 iterations; < >, sample size.

four treatments resulted in sub-sample sizes of 77 each for groups CLO, FHI and CHI with group FLO consisting of 75 respondents. Testing suggested that all groups were homogenous across a variety of socio-economic and demographic variables as well as a range of visit characteristics and related preferences.[9]

Table 1 presents summary WTP statistics for the four treatments considered, together with parametric bootstrap confidence intervals. Cursory inspection suggests that changes in interviewer appearance have a substantial impact upon stated WTP. The direction of this effect runs as expected with higher values being recorded when the interviewer was dressed more formally. The magnitude of this effect is substantial with responses to the interviewer when formally dressed being between two-thirds and more than three quarters larger than those given to that same interviewer when more casually dressed. Table 1 also indicates substantial information effects, again in the expected direction with increased information being associated with higher WTP sums. However, here the uplift is more modest, being in the range of 30–40%. Given these magnitudes, it is unsurprising that the most dramatic difference occurs when both effects work in parallel (i.e. formal dress with increased information) to more than double WTP. Conversely, when these effects operate in opposite directions (as per the comparison of cells CHI and FLO) differences are modest and indeed median values are identical.

The parametric bootstrap confidence intervals reported in Table 1 are somewhat dubious given that, as can be seen from summary statistics, the underlying distributions are not normal. Consequently Table 2 contrasts these with a series of non-parametric tests of difference between the various treatments.

Considering Table 2 we can see some considerable difference between parametric and non-parametric tests. Given the nature of the data reported in Table 1 we therefore focus upon non-parametric testing as a more valid assessment of our findings. Considering our tests of appearance effects (H_0^a), we can see that, while holding information at its lower level our comparison narrowly fails to be significant (at $P=0.10$), when information is held at its higher level interviewer appearance exerts a strongly significant impact upon stated WTP. As expected, more formal dress is associated with higher WTP sums. Turning to consider information effects (H_0^i), here both of our comparisons prove statistically significant with, again as expected, higher information being associated with increased levels of stated WTP.

Table 2
Comparison of parametric and non-parametric hypothesis tests

Test	Parametric bootstrap test of significance at $P<0.05$	Non-parametric Mann–Whitney test; (P value)
Appearance effects (H_0^a)		
FLO vs. CLO	Significant	0.118
FHI vs. CHI	Significant	0.003
Information effects (H_0^i)		
FLO vs. FHI	Not significant	0.021
CLO vs. CHI	Not significant	0.098
Combined appearance and information effects (H_0^j)		
CLO vs. FHI	Significant	0.000
CHI vs. FLO	Not significant	0.863

[9] Non-parametric testing confirmed that no significant association could be found at even a 20% confidence interval between group and the following variables: respondents annual household income; whether the respondent was a tax-payer; respondents age; number of household members aged 16 and over; number of household members aged under 16 years old; number of other recreational sites visited during the day of interview; visitor type (daytripper, on holiday, working, living at site); whether the respondent was on his/her first visit to Grizedale Forest; how many previous visits had been made to Grizedale Forest; whether the respondent would visit Grizedale Forest again; the respondent's rating of the scenery at Grizedale Forest.

Finally, when both appearance and information effects work to increase WTP (i.e. formal dress plus higher information) stated WTP increases by its most significant amount. Again when the interviewer appearance and information effects work in opposing directions they tend to cancel each other out and are clearly insignificant.

7. Discussion and conclusions

This paper adopts an experimental approach to the assessment of the impact which two elements of the interview process might have upon stated WTP in CV studies. As noted previously, we observed that additional information, particularly concerning the less familiar and non-use aspects of a good, could be associated with increases in stated values. In addition to this we conducted a simple, yet novel, test to examine one aspect of the influence which interviewers may have upon responses. Our test of appearance effects, articulated through the medium of altering an interviewers' dress, shows that even this apparently minor change may have considerable effects upon stated WTP.

How then should we interpret these findings? We can identify a number of competing views here, one of which might be to dismiss this study on the grounds that it utilises an OE elicitation format which, as we have ourselves noted elsewhere, is the subject of critical debate regarding its incentive compatibility characteristics (Bateman et al., 1995, 2002, 2004). Certainly it would be interesting to consider the impact of elicitation format and consequent incentive compatibility upon these results, for example by repeating this study using a single-bound dichotomous choice or referendum elicitation format (although such an extension would entail a very substantial expansion in sample size in order to maintain the statistical power of any test). However, the pattern of results found in the present study do not seem to be consistent with this critique. Incentive compatibility problems might result in two types of behaviour. First, respondents might treat the valuation question as entirely inconsequential. However, in such a case the significant differences observed in our study would not be expected. Second, respondents might behave strategically. Yet again such behaviour does not seem to be the root of the effects observed as it is unclear why a respondent who decides to act strategically should be either more or less strategic depending upon what the interviewer is wearing. We conclude therefore that the incentive compatibility critique is not persuasive here.

An alternative view is that (contrary to our 'straw-man' intuition) such results might be interpreted as directly compatible with economic theory if the wearing of a suit was interpreted as providing pertinent information regarding the good on offer. For example, we can imagine respondents thinking that 'the man in the suit can deliver'.[10] In such a case it is plausible that this might be subjectively (possibly even subconsciously) interpreted as providing an indication regarding the probability of provision of the good. We have shown elsewhere that there is a significant and positive relationship between perceived provision probability and stated WTP (Powe and Bateman, in press) and such an effect would be consistent with the pattern of responses observed in the present study.

While we accept that the above argument is coherent, the findings reported in this paper are also entirely consistent with a psychologically-based critique which argues that the WTP values stated in this CV study (and many other) are only very fuzzily related to formal economic preferences and are constructed in the course of the valuation exercise with reference to a variety of frames and heuristics provided by the design, implementation and myriad other characteristics of the survey (indeed, under such a critique, this study merely serves to illustrate the diversity of psychological triggers which may be activated during the survey interview, many of which may be difficult to anticipate). So, for example, the interviewer appearance effect could be due to a host of respondent interpretations such as being more concerned about what a well-dressed interviewer might think of them, or considering that such a person is more likely to be a tax-payer and therefore one of those likely to also be paying for the good, etc. The diversity of such

[10] Note that other circumstances, such as alternative goods or different sample populations may result in differing relationships being observed. One could imagine some populations who would see formal dress as a negative feature of the interviewer resulting in a lowering of WTP.

influences would mean that studies would fail many simple tests of procedural invariance, and would therefore, be considered unsuitable for use in economic decision making.

In fact it is a generally agreed position that, where some non-market good is under investigation, an individual respondent will often commence a CV survey without a clear, prior conception of their WTP for that good.[11] Respondents then 'discover' or 'construct'[12] their preferences and corresponding WTP during the course of the valuation exercise. A central issue of debate is whether these preferences are constructed in a consistent manner[13] or whether information which, from an economic–theoretic perspective, which is irrelevant influences the resultant stated preferences. As demonstrated above it is often difficult to categorically state whether a given impact is or is not consistent with such theory (and by extension, whether a given facet of a study is irrelevant or not). This arises primarily because, in many circumstances, economic theory fails to provide us with clear expectations (Hanemann, 1996). This is a real problem both from an academic perspective, in that it inhibits the construction of definitive tests, and from a decision making perspective in that it limits the predictive power of theory to a narrower range of circumstances than might be encountered in the real world (typically being applied only through the imposition of often strict assumptions). Given this, the authors believe it is vital to extend the remit of theory to embrace such complexity. If economic theory fails to address this issue it will remain trapped within the necessity of assumption and the subject of critiques which cannot be definitively rejected.

[11] As Carson et al. (1999) point out, it would be both inefficient and irrational for an individual to have previously spent time considering their WTP for the plethora of all non-market goods on the off-chance that they may one day be asked to state such an amount.

[12] The use of either of these terms is somewhat value laden, with theoretically consistent preferences typically being described as 'discovered' (or similar terms, see Binmore, 1999; List, 2001, 2003; Plott and Zeiler, 2002) while anomalous preferences are most frequently termed 'constructed' (Slovic, 1991; Tversky and Thaler, 1990). However, these are not hard and fast rules for terminology.

[13] Of course a deeper issue concerns the validity, rather than just the consistency, of these preferences. This is not addressed in this paper.

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References

Bateman, I.J., Langford, I.H., 1997. Budget constraint, temporal and ordering effects in contingent valuation studies. Environment and Planning A 29 (7), 1215–1228.

Bateman, I.J., Mawby, J., 2003. First impressions count—almost double!: a study of the interaction of interviewer appearance and information effects in stated preference studies. PEDM Working Paper, CSERGE, University of East Anglia, UK.

Bateman, I.J., Langford, I.H., Turner, R.K., Willis, K.G., Garrod, G.D., 1995. Elicitation and truncation effects in contingent valuation studies. Ecological Economics 12 (2), 161–179.

Bateman, I.J., Carson, R.T., Day, B., Hanemann, W.M., Hanley, N., Hett, T., Jones-Lee, M., Loomes, G., Mourato, S., Ozdemirogla, E., Pearce, D.W., Sugden, R., Swanson, J., 2002. Guidelines for the Use of Expressed Preference Methods for the Valuation of Preferences for Non-market Goods. Edward Elgar Publishing, Cheltenham.

Bateman, I.J., Cole, M., Cooper, P., Georgiou, S., Hadley, D., Poe, G.L., 2004. On visible choice sets and scope sensitivity. Journal of Environmental Economics and Management 47, 71–93.

Bergstrom, J., Dillman, B., 1985. Public environmental amenity benefits of private land: the case of prime agricultural land. Southern Journal of Agricultural Economics 17, 139–150.

Bergstrom, J., Stoll, J., Randall, A., 1989. Information effects in contingent markets. American Journal of Agricultural Economics, 685–691 (August).

Binmore, K., 1999. Why experiment in economics? The Economic Journal 109, F16–F24.

Boyle, K.J., 1989. Commodity valuation and the specification of contingent valuation questions. Land Economics 55, 57–63.

Boyle, K.J., Bishop, R.C., 1988. Welfare measurement using contingent valuation: a comparison of techniques. American Journal of Agricultural Economics 70, 20–28.

Boyle, K.J., Reiling, S., Philips, M., 1991. Species substitution and question sequencing in contingent valuation surveys. Leisure Sciences 12, 103–118.

Cameron, T.A., Englin, J., 1997. Respondent experience and contingent valuation of environmental goods. Journal of Environmental Economics and Management 33, 296–313.

Carson, R.T., Groves, T., Machina, M.J., 1999. Incentive and informational properties of preference questions. Plenary Address, Ninth Annual Conference of the European Association of Environmental and Resource Economists (EAERE), Oslo, Norway, June 1999.

Champ, P.A., Boyle, K., Brown, T.C. (Eds.), 2003. A Primer on Non-Market Valuation. Kluwer, Dordrecht.

Desvousges, W.H., Smith, V.K., Fisher, A., 1987. Option price estimates for water quality improvement: a contingent valuation study for the Monongahela River. Journal of Environmental Economics and Management 14, 248–267.

Hanemann, W.M., 1996. Theory versus data in the contingent valuation debate. In: Bjornstad, D.J., Kahn, J.R. (Eds.), The Contingent Valuation of Environmental Resources: Methodological Issues and Research Needs. Edward Elgar, Cheltenham, pp. 38–60.

Harris, C.C., Driver, B.L., McLaughlin, M.J., 1989. Improving the Contingent Valuation Method: A Psychological Approach. Journal of Environmental Economics and Management 17, 213–229.

List, J.A., 2001. Do explicit warnings eliminate the hypothetical bias in elicitation procedures? Evidence from field auctions for sportscards. American Economic Review 91 (5), 1498–1507.

List, J.A., 2003. Does market experience eliminate market anomalies? Quarterly Journal of Economics 118 (1), 41–72 (February).

Loomis, J.B., Kent, P., Strange, L., Fausch, K., Covich, A., 2000. Measuring the total economic value of restoring ecosystem services in an impaired river basin: results from a contingent valuation survey. Ecological Economics 33, 103–117.

Mannesto, G., Loomis, J.B., 1991. Evaluation of mail an in-person contingent value surveys: results of a study of recreational boaters. Journal of Environmental Management 32, 177–190.

Mitchell, R., Carson, R.T., 1989. Using Surveys to Value Public Goods: The Contingent Valuation Method Resources for the Future, Washington, DC.

Munro, A., Hanley, N., 1999. Information, uncertainty and contingent valuation. In: Bateman, I.J., Willis, K.G. (Eds.), Valuing Environmental Preferences: Theory and Practice of the Contingent Valuation Method in the US, EU, and Developing Countries. Oxford University Press, Oxford, UK, pp. 258–279.

Orne, M.T., 1962. On the social psychology of the psychological experiment. American Psychologist 17, 776–789.

Plott, C.R., Zeiler, K., 2002. The willingness to pay/willingness to accept gap, the 'endowment effect' and experimental procedures for eliciting valuations. Social Science Working Paper 1132, Division of the Humanities and Social Sciences, California Institute of Technology, Pasadena.

Powe, N.A., Bateman, I.J., in press. Investigating insensitivity to scope: a split-sample test of perceived scheme realism. Land Economics.

Samples, K., Dixon, J., Gower, M., 1986. Information disclosure and endangered species valuation. Land Economics 62, 306–312.

Schkade, D.A., Payne, J.W., 1994. How people respond to contingent valuation questions: a verbal protocol analysis of willingness to pay for an environmental regulation. Journal of Environmental Economics and Management 26, 88–109.

Slovic, P., 1991. The construction of preferences. American Psychologist 50 (5), 364–371.

Slovic, P., Fischoff, B., Lichtenstein, S., 1982. Response mode, framing and information processing effects in risk assessment. In: Hogarth, R. (Ed.), New Directions for the Methodology of Social and Behavioural Science: Question Framing and Response Consistency. Jossey-Bass, San Francisco, pp. 21–36.

Slovic, P., Finucane, M.L., Peters, E., MacGregör, D.G., 2002. The affect heuristic. In: Gilovich, T., Griffin, D., Kahneman, D. (Eds.), Heuristics and Biases: The Psychology of Intuitive Judgment. Cambridge University Press, New York, pp. 397–420.

Thaler, R., 1980. Towards a positive theory of consumer choice. Journal of Economic Behaviour and Organization 1, 39–60 (March).

Tversky, A., Thaler, R., 1990. Anomalies: preference reversals. Journal of Economic Perspectives 4 (2), 201–211.

Walsh, R.G., Bjonback, R.D., Aiken, R.A., Rosenthal, D.H., 1990. Estimating the public benefits of protecting forest quality. Journal of Environmental Management 30, 175–189.

Whitehead, J., Blomquist, G., 1991. Measuring contingent values for wetlands: effects of information about related environmental goods. Water Resources Research 27, 2523–2531.