Self-image and valuation of moral goods: Stated versus actual willingness to pay

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ABSTRACT

Hypothetical bias in stated-preference methods appears sometimes to be very large, and other times non-existent. This is here largely explained by a model where people derive utility from a positive self-image associated with morally commendable behavior. The results of a choice experiment are consistent with the predictions of this model; the hypothetical marginal willingness to pay (*MWTP*) for a moral good (contributions to a WWF project) is significantly higher than the corresponding real-money *MWTP*, whereas no hypothetical bias is seen for an amoral good (a restaurant voucher). Moreover, the evidence suggests that also the real-money *MWTP* for the moral good is biased upwards, in the sense that it appears to be higher within than outside the experimental context.

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1. Introduction

What determines people's responses in stated-preference (SP) surveys that target issues with a perceived ethical dimension, such as valuation of environmental and various other types of public goods? And to what extent can we interpret those responses as being representative of underlying preferences? These questions are crucial from a policy perspective, in particular in the US and an increasing number of European countries, where cost-benefit analysis, often making use of SP methods, is compulsory for all major proposed regulations. Although most researchers probably agree that there is potential scope for overstatement in various kinds of SP studies, no consensus exists on whether this is a major problem, or on how hypothetical estimates could or should be calibrated to better represent underlying preferences. Perhaps more importantly, few studies have investigated for which types of goods and under what circumstances hypothetical bias is likely to occur, and why this is the case.

In this paper, we develop and test a theoretical model aimed at explaining variations of hypothetical bias in the literature. Drawing on papers by Andreoni (1989, 1990), Kahneman and Knetsch (1992), Akerlof and Kranton (2000), Brekke et al. (2003), Santos-Pinto and Sobel (2005), and Nyborg and Brekke (2010), the model proposes that people, in addition to the instrumental benefits associated with a good, derive utility from a positive self-image. This, in turn, is influenced by (*i*)

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the degree to which stated or real behavior coincides with the respondents' ethical views, and (*ii*) the extent to which respondents are honest with themselves. The model predicts that in SP studies people overstate their marginal willingness to pay (*MWTP*) for goods with a perceived ethical dimension, denoted moral goods, but not for morally neutral goods. The model furthermore suggests that also the elicited real-money *MWTP* exaggerates people's valuation of a moral good, although to a lesser extent.

In order to test these predictions, we conduct a choice experiment (CE) assessing people's valuation of what we refer to as a moral and an amoral good, respectively. A CE is an SP method where the respondents make repeated choices between bundles of goods. The method has been increasingly used to value non-market goods (see, e.g., Louviere et al., 2000; List et al., 2006). The moral good is here represented by a donation to a campaign administered by the World Wildlife Fund (WWF) to help save the Asian Elephant, and the amoral good is a voucher valid at a local Italian restaurant in Gothenburg, Sweden. The CE is then compared with the outcome of a similar exercise, based on another but similar sample drawn from the same underlying student population, only this time using real instead of hypothetical monetary trade-offs. The empirical results are consistent with the predictions of our model; the stated *MWTP* for the moral good (the WWF campaign) is significantly higher than the corresponding real-money *MWTP*, whereas no difference is found between stated and real-money WTP for the amoral good (the restaurant voucher). In following up on these findings, we illustrate how also the real-money CE exaggerates people's valuation of the moral good, in the sense that the experimental situation per se seems to induce a positive bias.

Section 2 presents a brief review of hypothetical bias in SP studies and of relevant psychological and behavioral economics literature that helps to explain past empirical results. Section 3 presents a formalized model and derives testable hypotheses, whereas Section 4 outlines the CE design for assessing the value of our moral and amoral good. The empirical results are presented in Section 5, while Section 6 discusses the findings in a broader context.

2. Literature review

2.1. The existence of hypothetical bias

The extent to which *WTP* statements correspond with real-money payments is often seen as the ultimate validity test of SP methods. List and Gallet (2001) and Murphy et al. (2005) conducted meta-studies on observed disparities between hypothetical and real-money *WTP* in contingent valuation (CV) studies, and reported that hypothetical *WTP* generally exceeds real-money *WTP*, and that the difference tends to be larger for public than for private goods. Murphy et al. (2005) also found a much lower hypothetical bias in studies that relied on a within-subject test of hypothetical and real-money *WTP* than in studies making split-sample comparisons between subjects.[1]

However, some other studies report no statistically significant differences between hypothetical and real-money *WTP*. Of particular relevance to our work are Carlsson and Martinsson (2001) and Cameron et al. (2002), who used CEs to value what we here denote moral goods. In Carlsson and Martinsson (2001), the respondents first made 16 hypothetical pair-wise choices and then 16 similar (but not identical) pair-wise choices with real-money implications. No significant difference was found between hypothetical and real-money marginal *WTP* for donations to a variety of environmental projects, although the former was 10–15 percent higher than the latter. Cameron et al. (2002) tested several elicitation formats in a comprehensive study and found that the mean *WTP* was between 30 and 330 percent larger in hypothetical CEs. However, due to large error terms, a common underlying preference structure could not be rejected.[2]

For some environmental goods, such as access to recreation sites or hunting rights, it is possible to compare SP methods with revealed preference (RP) methods, for instance by using travel-cost or hedonic-pricing methods. In a meta-analysis by Carson (1996), values obtained from RP studies were found to be of the same order of magnitude as those derived using dichotomous-choice CV studies. Risk and time valuations are other examples where both SP and RP methods are routinely used. In another large meta-analysis, Kochi et al. (2003) found that CV studies on average result in significantly lower values of statistical lives than studies based on the hedonic-pricing method. Finally, Wardman (2001) performed a meta-study of British value-of-time studies and found relatively small differences, although SP studies on average yielded somewhat lower values.

2.2. Possible explanations behind hypothetical biases

The most frequently assumed reason for a positive hypothetical bias is that respondents simply do not take hypothetical questions seriously. However, if this assumption were correct, we would expect to see a greater variance of bids and not a systematic bias upwards. Given the above empirical patterns and the high policy relevance, it appears worthwhile to investigate more systematically for which goods and under what circumstances hypothetical statements are and are not likely to be biased. Moreover, we would like to have an intuitively plausible theory for *why* overstatements frequently occur in some contexts but not in others.

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[1] For a direct test of hypothetical bias in within- and between-subject designs, see Johansson-Stenman and Svedsäter (2008).

[2] Presumably, this was partly due to the fact that there was much less variation in the real-money bids; cf. Carlsson and Johansson-Stenman (2010).