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Administering Contingent Valuation Surveys in Developing Countries

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Summary. — Ten years ago only a handful of very rudimentary contingent valuation (CV) studies had been conducted in developing countries; at that time the problems associated with posing hypothetical questions to low-income, perhaps illiterate respondents were assumed to be so overwhelming that one should not even try. Today it is now assumed by many environmental and resource economists and policy analysts working in developing countries that contingent valuation surveys are straightforward and easy to do. This paper examines some of the issues that have arisen and some of the lessons learned over the last 10 years about administering contingent valuation surveys in developing countries. The paper focuses on five issues in particular: (a) explaining to enumerators what a contingent valuation study is all about; (b) interpreting responses to contingent valuation questions; (c) setting referendum prices; (d) constructing joint public-private CV scenarios; and (e) ethical problems in conducting such surveys. It is argued that there are numerous issues that arise in contingent valuation work in developing countries that demand careful attention, but that in many respects it is easier to do high-quality contingent valuation surveys in developing countries than in industrialized countries. © 1998 Elsevier Science Ltd. All rights reserved

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1. INTRODUCTION

Ten years ago only a handful of very rudimentary contingent valuation studies¹ had been conducted in developing countries; at the time the conventional wisdom was that it simply could not be done. The problems associated with posing hypothetical questions to low-income, perhaps illiterate respondents were assumed to be so overwhelming that one should not even try. Today we have come full circle; it is now assumed by many environmental and resource economists and policy analysts working in developing countries that contingent valuation (CV) surveys are straightforward and easy to do.

Because the contingent valuation business in the United States has been such an academic and political war zone for the past few years, many people are unaware of what a flourishing business contingent valuation studies are becoming in other parts of the world. Bilateral donor agencies and the international development banks are increasingly putting contingent valuation techniques to use in project and policy appraisal as part of their everyday operations work. Just to illustrate the point, a single Latin American department in the World Bank has now funded a sufficient number of CV studies that its management is considering organizing an in-house conference on

experiences of using the results of CV studies, the performance of different contractors, and ways of reducing the costs of future CV work.

The initial applications of the contingent valuation method in developing countries were primarily in two areas: water supply and sanitation (Whittington *et al.*, 1988, 1990, 1993; McConnell and Ducci, 1988; Briscoe *et al.*, 1990; Altaf *et al.*, 1993; Singh *et al.*, 1993), and recreation, tourism, and national parks (Grandstaff and Dixon, 1986; Shyamsundar and Kramer, 1993; Menkhaus, 1994; Hadker *et al.*, 1995). The areas of applications are growing rapidly, however, and now include surface water quality (Choe *et al.*, 1996); health (Swallow and Woudyalow, 1994; Alberini *et al.*, 1995; Whittington *et al.*, 1996); and biodiversity conservation (Moran, 1994).² In light of the controversy over the use of the contingent valuation method (CVM) in the United States, a large fraction of future applications of the CVM are likely to be in developing countries.

In this paper I discuss some of the issues that have arisen and some of the lessons learned over the last

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10 years about administering CV surveys in developing countries. The discussion is organized around five different issues: (a) explaining what a contingent valuation study is all about; (b) interpreting responses to contingent valuation questions; (c) setting referendum prices; (d) constructing joint public-private CV scenarios; and (e) ethical problems in conducting such surveys. This list is not meant to be exhaustive, but it will hopefully provide the reader with insights into some of the issues involved in conducting CV surveys in developing countries.

2. EXPLAINING WHAT A CONTINGENT VALUATION STUDY IS ALL ABOUT

The first difficulty a CV researcher often faces in administering a CV survey in a developing country is to explain to government officials and interviewers what the study is about. The concepts of economic value and "maximum willingness to pay" (or minimum compensation that a respondent is willing to accept) are often difficult for the researcher to translate and for some noneconomists to grasp. Open-ended willingness-to-pay questions require that the CV researcher convey the notion of the *maximum* amount an individual is willing to pay; this can be particularly difficult to translate. For example, in a CV study I conducted in Haiti (Whittington *et al.*, 1990), in response to an early version of an open-ended CV question, a respondent asked one of our interviewers, "What do you mean the maximum I would be willing to pay? You mean when someone has a gun to my head?" In fact, the CV researcher is trying to determine the maximum amount the respondent would be willing to pay for the proposed (or hypothetical) good or service in the context of the *existing institutional regime* within which individuals are free to allocate their personal financial resources. The CV researcher would thus like to measure the amount of income the household could give up after obtaining the goods and services from the project that would make her just as well-off as she would have been if the project had not been built.

If a referendum elicitation procedure is used,

respondents themselves will not need to be asked an open-ended question about the maximum they would be willing to pay for a proposed good or service. Instead, split-sample techniques will be utilized, and different prices will be assigned to randomly selected respondents. In the United States there is a fairly large cadre of professional interviewers who work on survey after survey. Split-sample questions are routinely used in US surveys, and such professional interviewers rarely question their use.

This is not the case in most developing countries, and the interviewers themselves will want to understand the reason for the split-sample experiment. One particularly common source of confusion relates to the distinction many noneconomists want to make between willingness and ability to pay. It is important for the CV researcher to clearly communicate to interviewers that the purpose of the valuation question is to determine what the respondent would do if she had to make a real economic commitment (i.e., faced an actual budget constraint). In other words, the objective of the CV study is to determine how much respondents are willing *and* able to pay.

The classification scheme presented in Table 1 can often be useful to clarify this point. As shown, the total population of respondents can be envisaged as four groups. First, there are respondents who are willing and able to pay (cell 1). These are the ones the CV researcher wants to classify as accepting the CV scenario: they are both willing to pay for the hypothetical good or service (i.e., they say they are ready to make a real economic commitment if the consequences of the CV scenario could be delivered or ensured) and have sufficient income to do so. Second, there are respondents who are able but not willing to pay (cell 2). These respondents could pay in the sense that they have enough income, but they choose not to do so, presumably because they have other things on which they prefer to spend their money.

A third group of respondents are willing but not able (cell 3); in other words these people *would like* to purchase the commodity but cannot afford it. The CV researcher especially wants respondents in this group to take the budget constraint seriously, in which case

Table 1. *Willingness and ability to pay*

	Respondent is willing to pay for the hypothetical good or service	Respondent is not willing to pay for the hypothetical good or service
Respondent is able to pay for the hypothetical good or service	willing and able (Cell 1)	able but not willing (Cell 2)
Respondent is not able to pay for the hypothetical good or service	willing, but not able (Cell 3)	not able, not willing (Cell 4)

they would reject the CV scenario. It is this group that typically causes noneconomists the most confusion. The argument is often made that individuals in this third group would like to purchase the proposed good or service if their income were higher. But in their current financial circumstances they are not able to pay. Noneconomists will often like to classify these respondents as willing to pay, but the CV researcher must emphasize that for the purposes of the study such individuals must be categorized as *not willing to pay* (i.e., not *willing and able*).

A fourth group of individuals are not willing and not able to pay (cell 4). Respondents in this group cannot afford to pay for the hypothetical good or service. But even if their incomes increased by some specified amount, they would still not want to pay. These people should clearly be classified as not willing to accept the CV scenario. The important point to recognize is that demand for the proposed good or service is not likely to be a function solely of income. It is possible that increases in income will have a relatively small effect on willingness to pay for a specified good or service.

3. INTERPRETING RESPONSES TO CONTINGENT VALUATION QUESTIONS

One of the reasons that many economists and survey researchers have been skeptical about the ability to conduct CV surveys in developing countries is the presumed difficulty of understanding and interpreting respondents' answers to abstract (or hypothetical) questions. Such worries are often well-founded, and careful questionnaire development is needed. We faced an interesting problem interpreting responses to the valuation questions in a CV survey conducted in Semarang, Indonesia (Whittington *et al.*, 1995).

The CV scenario was designed to determine whether a household would vote in favor of having

water and sewer lines installed in its neighborhood if everyone in the community had to pay a specified assessment fee (whether or not they connected), and then, if water and sewer lines were installed, whether the household would choose to connect to them if a given monthly tariff were charged. After the first couple of days of pretesting a CV questionnaire, we discovered that everyone was saying "yes" to everything, regardless of the assessment fee or monthly tariff offered to them.

We stopped the pretesting and held a meeting with our team of enumerators to find out why everyone was answering "yes" to all of our valuation questions. During the course of a lengthy discussion, it became clear that respondents were in fact answering "yes, but..." and then giving many different qualifications to their answer. The interviewers informed us that in Indonesia these were all polite ways of saying "no." We then developed a coded list of the many ways a respondent might say "yes, but...", to our valuation questions and mean "no."

Table 2 presents this list of different ways to say "no" and the number of times respondents gave each "yes, but" answer to the valuation question (regarding whether the respondent's household would want to connect to the new water and sewer lines if a specified monthly tariff would be charged). For example, of the 164 answers that we recorded as "no," 52 respondents (32%) answered "Yes, but I cannot afford it." Another 18% said, "I agree, but the costs are too high." These "yes, but" responses (50% of the total number of "no's") seem to be clearly negative and correctly classified as "no." But, another 30% of the respondents said, "I need to know others' opinion about the program before I decide." Our enumerators assured us that this was again simply a polite way of saying "no," but to us these answers seemed reasonable. Respondents may simply need time to think about their decisions, and that discussing the matter with their neighbors would be a reasonable approach to analyzing the pros and

Table 2. Description, frequency of different "no" responses (Semarang, Indonesia)

Description of response	Number of times recorded	Percent of responses
I cannot afford it	52	32
I need to know others' opinion about the program	49	30
I agree but the costs are too high	30	18
Yes, if the costs are reduced	11	7
I have many expenses, children, etc.	8	5
I agree, but the current situation is satisfactory	6	4
I agree, but I do not want to pay in advance	4	2
Yes, if the payment period is extended	2	1
Yes, if participation is mandatory	1	<1
I can pay, but I want to avoid rumors about my wealth	1	<1
Total number of verbatim responses	164	100%

cons of the proposed project (Whittington *et al.*, 1992). The assignment of such responses to the "no" category seems more uncertain than the previous two types of answers.³ Other answers listed in Table 2 also seem somewhat ambiguous and uncertain. We thus believe that the proportion of respondents that we have placed in the "no" category for this valuation question is probably too high. We followed our enumerators' guidance in coding the answers, but in fact we believe our analytical results are probably an underestimate of the number of households that would actually connect to the water and sewer lines.

This example illustrates how careful CV researchers must be in interpreting respondents' answers to valuation questions in a cross-cultural context. The interpretation of responses to CV questions can involve a large cultural component that makes it difficult to successfully execute a survey with a questionnaire developed elsewhere.

4. SETTING REFERENDUM PRICES

When researchers use a referendum-type elicitation procedure in administering CV surveys in developing countries, they have often made a simple mistake: the range of prices utilized is too narrow. They tend to set the highest referendum price too low and the lowest price too high. It is thus often difficult to estimate "good" valuation functions, and as a result the estimates of economic benefits are more uncertain than need be. This tendency to use too narrow a price range is understandable because extremely high and extremely low prices often lack credibility. If the amount that the enumerator asks lacks credibility, the respondent is unlikely to answer the question on the basis of the price asked.

In order to increase the credibility of the CV results, it is generally advisable that the highest price used be rejected by 90–95% of the respondents. If the distribution of respondents' values were known, using such a high price would not be efficient (Alberini, 1995a, 1995b; Kanninen, 1995), but as a practical matter, in developing countries a design point must usually be sacrificed to show that there is a price that will choke off almost everyone's demand. CV researchers tend to be reluctant, however, to set the highest referendum price high enough to do this. This is in part because in developing countries CV interviews are almost always conducted in-person, and it is embarrassing for interviewers to ask such a high price. Respondents often consider the CV scenario very seriously, and, if they receive the highest referendum price, can be acutely disappointed that the proposed good or service is so expensive. This problem is exacerbated in countries with highly skewed income distribu-

tions. Interviewers often complain that asking such a high price is silly because everyone knows that people cannot afford such a price, and the interview is difficult for them to conduct. In effect, asking such a high price makes the interviewers look insensitive and/or uninformed. This problem is compounded if there is a tendency of respondents to say "yes" to whatever question the interviewer asks ("compliance bias"). In this case choking off demand by asking a very high price is even harder, and a very high price may be even more necessary. In some cases a very high price may simply not be plausible to respondents, and may create doubts about the credibility of the entire scenario.

For some of the same reasons, interviewers are also reluctant to ask a very low price. Such a question can also make interviewers seem uninformed. But there is another reason CV researchers often set the lowest price too high. If the agency funding the CV survey is interested in using the results for pricing decisions, they may simply not be interested in learning about the extent of demand for the good or service at very low prices because they have no intention of making the service available under such terms. For the funding agency, asking part of the sample a very low price may well seem like a waste of resources.⁴

In addition, some goods or services described in CV scenarios may actually have little or no value to some respondents. For example, an improved water supply system will likely hurt water vendors. For such respondents, low prices will not lead to a high acceptance of the CV scenario. Just as with prices that are too high; prices can be so low that they threaten the credibility of the CV scenario. One implication of this is that the CV research needs to use debriefing questions to understand *why* a respondent would reject a very low price. Another is to explicitly recognize that many projects do have negative effects on some people and thus to expect negative estimates of willingness to pay for some respondents.

5. CONSTRUCTING JOINT PUBLIC-PRIVATE CV SCENARIOS

Many of the CV studies conducted in developing countries have been concerned with estimating the demand for infrastructure services. In one important respect, the CV scenarios required for such surveys are considerably more complex than those used in CV surveys about environmental quality improvements in industrialized countries. In order to understand household demand for infrastructure services such as improved sewers, roads, or telecommunications, it is often necessary to model jointly two household decisions.

First, a household must decide whether to support a collective decision of a community regarding whether its members are willing to share some of the capital costs of a project. For example, consider an infrastructure investment in sewer lines. If it could be assumed that all households in a particular neighborhood would connect or could be forced to connect to new sewer lines if they were installed, a collective decision on their installation might not be necessary. But if this cannot be assumed, as is typically the case, then the agency or authority responsible for the sewerage system needs assurance that, if the sewer pipe is laid in a neighborhood, a household will pay a predetermined amount for this infrastructure improvement whether or not it connects. A fiscally responsible sewer authority cannot bear the financial risk of installing such expensive infrastructure without some form of payment guarantee. From the agency's financial perspective, each household in the neighborhood should be required to pay some share of the sewer network installation costs—whether or not the household obtains a connection—because the value of its property increases simply by having the option to connect in the future.

Second, a household must decide whether it will connect to such infrastructure if it were installed. Because many infrastructure projects have positive externalities and public good characteristics, it is plausible that a household would vote in favor of a project in the collective decision and agree to pay some share of the capital costs even if it decided not to use the service immediately. Because these two decisions are conceptually interrelated, the CV scenario needs to present information to the respondent about the terms and conditions of both parts of the "deal" (i.e., the public and private components) in order for the respondent to be able to make an informed choice. In practice this means that a large amount of information may need to be conveyed to respondents. This will typically necessitate the use of photographs and drawings.

Moreover, respondents are likely to have numerous questions about the proposals. This will require the use of highly trained, well-informed interviewers who can easily respond to new questions from respondents. It is, however, generally inadvisable to have survey interviewers deviate from the script of the questionnaire in an ad hoc manner. The enumerator may be instructed to repeat the information provided in the questionnaire script in a different form if the respondent does not initially understand it. In some cases the researcher may need to develop contingencies for the enumerator to deal with particular types of inquiries that are raised infrequently by respondents and to control for the effects of this provision of additional information to self-selected respondents.

6. ETHICAL PROBLEMS IN CONDUCTING CONTINGENT VALUATION SURVEYS⁵

At the 1994 Annual Meetings of the American Economics Association, during a panel discussion about the findings of the United States National Oceanic and Atmospheric Administration's Expert Panel Report on the Contingent Valuation Method, Professor Kenneth Arrow remarked that the contingent valuation method is fine, except when it is not. Most economists will interpret Professor Arrow's aside to mean that contingent valuation (CV) studies are fine when the results are accurate and reliable, and clearly not so good when this is not the case. Of course, knowing when CV results are accurate reflections of individuals' preferences is not easy, and the CV literature is now full of various tests for various biases and internal and external consistency that have been proposed and are being used to help CV researchers assess the quality of their results (Ajzen *et al.*, 1996; Boyle *et al.*, 1994, 1993; Rowe *et al.*, 1996; Carson and Mitchell, 1995; Diamond, 1996; Loomis *et al.*, 1993; Smith and Osbourne, 1996).

Absent from most of the current debate about the accuracy and reliability of CV results has been a careful consideration of several ethical issues that arise in the implementation of the contingent valuation method. In this section of the paper I discuss some of the ethical problems with much of current CV research practices in developing countries, and argue that "good" CV research demands more than simply obtaining accurate and reliable results: it also requires that CV researchers conform to accepted ethical standards of research with human subjects. Simply put, CV researchers must treat respondents in developing countries with more respect, as citizens rather than experimental subjects. It is quite possible that a given CV survey can yield accurate and reliable survey results and still not be an ethically acceptable method for economic analysis. The discussion is organized around three questions.

(a) *When is the use of a referendum elicitation procedure unethical?*

Although the merits of referendum-type question(s) are still being debated, most CV practitioners still probably consider the use of one or two discrete choice questions the preferred elicitation method. The implementation of the discrete-choice approach requires that several split-samples of respondents receive different randomly-assigned prices for the good or service described in the CV scenario. Their responses are used to construct values for the study population. CV researchers have not seemed troubled by the fact that giving different respondents

different prices may spread confusion and misinformation about the real costs of addressing a problem of possibly great public concern.

For example, I used a referendum question in two recent CV studies conducted for the World Bank (Pinheiro and Whittington, 1995; Whittington *et al.*, 1995). In a CV survey conducted in November 1994, designed to estimate households' demand for improved water services in a small town in Mozambique, we randomly assigned five different prices to subsamples of respondents. In June 1995, our study team returned to the town where the survey was conducted to brief a group of local government officials (including the District Administrator) and community leaders on the results of the CV survey. After the formal briefing there was lengthy group discussion about the policy implications of the findings, during which one elderly man, a neighborhood leader, said that he had followed the implementation of the survey closely and talked to many respondents after their interviews. He reported that he generally agreed with our findings. There was, however, one thing he did not understand: why were different households asked to pay different prices? Why should one household be charged more than another for a water connection? This did not seem fair or necessary to him.

Of course, it was never our intention to leave the impression that different households in the community would be charged different prices for a water connection, but that seems likely to have been one outcome of our CV survey. Our use of a referendum approach with different prices may well have increased public uncertainty and confusion about the costs of improved water services in this town.

In July 1995, in another CV survey for the World Bank, I helped design and manage a survey of a few hundred households in three areas of Semarang, Indonesia, a city of 1.2 million people on the northern coast of Java. We worked in three districts (*kelurahans*) of the city. Each neighborhood unit has an officially designated leader who had to be informed about the survey by higher level community leaders before the survey could take place. After such permission was secured, we sent a team of enumerators and a field supervisor to the neighborhood to interview all of the sample households in a relatively short period of time (generally 2–3 hours). In this way, respondents would supposedly have little time to discuss the interview with other respondents before the latter were interviewed.

In one community the neighborhood leader dropped in on an early interview unannounced and heard the referendum price offered the respondent. This price happened to be the highest of the four prices we used, and the neighborhood leader was

quite concerned. He quickly spread word throughout the neighborhood to answer "no" to our valuation question; he felt that the improved water and sanitation program offered in our CV scenario was simply too expensive at the highest of our referendum prices. Obviously our problem arose in part because the field supervisor and the enumerator were unable to exclude the neighborhood leader from a supposedly private interview (although in justice to them both, this is not a easy thing to do in Indonesia). But it also illustrates (i) how quickly information can spread in a close-knit urban community, (ii) how seriously some community members may take the information presented to them in a CV scenario, and (iii) how easily a community can be confused by using different prices and other split-sample experiments.

CV researchers may well argue that any such misinformation is the fault of the survey designer, who is supposed to craft language for scenarios that inform the respondent that the choice is "just" hypothetical. Respondents are thus told to "suppose" or "imagine" that the choice to be described is not actually or necessarily going to be offered. This is often a nuance that is lost in translation; in some cases the conditional subjunctive may actually not be translatable. It may also be false in the sense that a project is actually under consideration, and not hypothetical at all.

A good CV scenario is designed to be realistic and for respondents to take the "hypothetical" choice seriously. In practice, the more seriously a respondent considers the choice posed, the less hypothetical the scenario is likely to seem. This is particularly true for goods and services with large use values that are commonly provided by government—such as infrastructure services. The less hypothetical the provision of the good or service described in the CV scenario, the more likely the different referendum prices will confound serious public discussion of the issue at hand.

CV researchers generally assume that they will sample large populations, and that there will be little chance that one respondent will talk with another. In such a case, perhaps it can be assumed that any misinformation communicated to a relatively small number of respondents about the price (or other aspects) of a hypothetical good or service will not be widely discussed or influence public debate. But in small towns, villages, or urban neighborhoods in developing countries, such an assumption is quite often unwarranted. Even in large capital cities, a sample of 1,000–2,000 households is not so small that a CV survey cannot be discussed by many people—some perhaps quite knowledgeable about the problem addressed or influential in shaping public discourse about its solution.

This issue of the spread of misinformation arises

not only with the prices used in the referendum elicitation method, but with scenario construction and many other split sample experiments commonly used by CV researchers. For example, Carson *et al.*'s (1992) CV survey in support of the State of Alaska's case against Exxon in the Exxon-Valdez oil spill is one of the finest, most professional CV surveys conducted to date. In this survey Carson *et al.* (1992) crafted a CV scenario that described an oil spill prevention program that had two main components: the requirement that oil tankers be accompanied by escort ships while in the Valdez Straits in order to reduce the chances that they would inadvertently drift onto nearby rocks; and an oil spill containment technology called a "Norwegian sea fence" that could be used in the high seas of Prince Williams Sound. Respondents in the survey were asked whether they would vote for or against a rapid response oil spill containment force in Prince Williams Sound that would deploy these escort ships and the Norwegian sea fence if the implementation of the plan would cost their household a specified amount of money. Although the "Norwegian sea fence" technology did exist, it was not as large or effective as was conveyed in the CV scenario. The CV researchers told respondents that the Norwegian sea fence was more effective than it actually was so that they would believe the oil spill prevention and containment program would be extremely effective, and respondents would thus not reject the scenario as implausible.

A CV researcher is often more like a public opinion pollster than a market researcher. The act of engaging an individual in a conversation about issues of public concern obliges the researcher not only to accept certain ethical principles of research with human "subjects," but also to conform to additional ethical standards about the proper use of such information in a democratic society.

(b) *How honest should one be about the institutional regime contemplated for delivering the "hypothetical" goods or services?*

In developing countries CV researchers often face a situation that many of their counterparts in industrialized countries would at first glance envy: the CV scenarios used in such surveys may not be hypothetical, but all too real. If the donors and governments that fund the CV surveys judge the results to be credible, the findings will likely be used in policy decisions. This movement from hypothetical to "real" CV scenarios raises a host of ethical concerns.

To illustrate, it is common knowledge among the international construction and consulting firms carrying out infrastructure projects and providing

technical assistance with World Bank financing that in many countries a substantial portion of the proceeds of World Bank loans are paid in kickbacks to government officials. A standard mechanism for paying such bribes to government officials is for international consulting firms to hire local counterpart firms, and to pay these local firms for services that are either overpriced or not rendered at all. These local firms then pay the kickbacks to government officials.

Such siphoning off of foreign assistance by senior government officials does not often go unnoticed by a country's urban poor. They see government officials who earn modest salaries driving Mercedes and living in expensive homes. Suppose now that the World Bank is considering making a loan to expand water and sanitation services in a country where such kickbacks are common, and that the CV researcher is asked to estimate households' willingness to pay for the benefits of such a project. The results of such a CV survey might be used as part of a project feasibility study, pricing study, or cost-benefit analysis.

Imagine that the CV researcher accepts the assignment and crafts a scenario asking a sample respondent to suppose that she could vote on whether the national government should borrow money from the World Bank to finance a new water and sewerage system for the nation's capital. The respondent is told that if the majority of people voted for the government to take the loan, a new water and sewer distribution system would be constructed, and her household would be assessed a specified amount of money to have the system extended into her neighborhood. If her household chose to do so, it could then connect to this system at a given monthly tariff—in addition to the assessment fee, and connection and replumbing costs. If the majority of people voted against the plan, the government would not borrow the money and the new water and sewer system would not be built.

Suppose then that during the pretest of the survey instrument, numerous respondents say that they do not want their government to borrow money from the World Bank because they know that much of the funds will not be used for the intended purposes, and in this regard they are in fact correct. If the survey instrument were implemented in this form, the results could substantially underestimate households' perceived benefits of the new water and sanitation system. Some might well argue that the instrument should be revised because the researcher's terms of reference were to measure the economic benefits of the new water and sanitation services, not the public's distrust of its government and concerns about whether World Bank funds would be properly used. Suppose the researcher is instructed to eliminate any reference to the World Bank in the

CV scenario, even though the World Bank does intend to use the results to appraise a water and sanitation project in just the way that some of the respondents feared. Should the CV researcher serve his client in this manner and delete the references to World Bank financing in the scenario? Or does he bear some responsibility to be truthful to the respondents he is interviewing about the true purposes of the survey?

From a theoretical perspective, it is not in fact possible to value a project independently of how it is to be paid for or the institutional regime that is assumed to be in place when the project is implemented. As long as people have preferences with regard to various aspects of how a project is carried out, such preferences need to be taken into account. The fact that valuation estimates are context specific has nothing to do with the contingent valuation method *per se*, although the CVM does offer the researcher substantial control over the specification of this context. Revealed preference valuation approaches generally accept the economic, political, and institutional context within which the data were generated as the correct one.

(c) *Should respondents be compensated? If so, how?*

For at least the last decade anthropologists and sociologists working in the development field have harshly criticized economists' use of large-scale household surveys as "extractive," meaning that researchers extract data from respondents and give them little, if anything, in return. This point was made forcefully to me by the leader of a poor, informal squatter community on the outskirts of Guatemala city: "we want more than words from your survey" (Lauria and Whittington, 1990). CV researchers need to give more careful thought to what they should return to the respondents and communities they work in.

One thing that survey researchers could give respondents is money, but this is rarely done. Respondents could be given money in order to (i) gain their cooperation, or (ii) express the researcher's appreciation for their participation. Survey researchers often contend that paying respondents will bias results and wreak havoc with the selection of respondents and implementation of the field work. This may well be true in some instances, but it is also somewhat self-serving. Paying respondents would

obviously cut into researchers' limited budgets, but that in itself does not mean it would not be a good thing to do. Market research firms in the United States routinely pay people to participate in focus group discussions.

Perhaps the most obvious thing CV researchers could do for respondents is to communicate their findings to the community where the research was conducted. There are many good reasons for doing this, not the least of which is that researchers are likely to gain new insights about their interpretations of the results of statistical and other analyses. But most importantly, the researcher owes the community a full account of what was learned.

7. SUMMARY

There are some contingent valuation researchers (I count myself among them) that believe it is easier to administer high-quality contingent valuation surveys in many developing countries than it is in industrialized countries. Response rates are typically very high in developing countries, and respondents are often quite receptive to listening and considering the questions posed. Moreover, interviewers are inexpensive relative to prices in industrialized countries. For a given sample size, the survey costs of an in-person CV survey in developing countries are thus typically an order of magnitude lower than in industrialized countries. This allows CV researchers to use larger sample sizes and conduct more elaborate experimental designs.

Not only is the cost of obtaining benefit information using the CVM considerably lower in developing countries than in industrialized countries, but the available data on the benefits of different kinds of projects are typically quite limited. This means that the marginal value of additional information obtained from CV surveys is likely to be large. It thus seems likely that it may be feasible and desirable to use the CVM in developing countries to help evaluate a wide range of projects. But this does not mean that conducting CV surveys in developing countries is easy: just that it is easier than conducting CV surveys in industrialized countries. As discussed in this paper, there are numerous issues that arise in CV work in developing countries that demand careful attention in order to increase the probability that high-quality results are obtained.

NOTES

1. The contingent valuation method is a survey technique that attempts to elicit information about individuals' (households') preferences for a good or service. Respondents

in a survey are asked a question (or series of questions) about how much they value a good or service. The technique is termed "contingent" because the good or service is not, in

fact, necessarily going to be provided by the enumerator or researcher: the provision of the good or service is hypothetical. The contingent valuation method can be used to obtain values of pure public goods, goods with both private and public characteristics, and private goods. Often it is used to assess preferences for goods or services for which a conventional market does not exist. For a brief introduction to the contingent valuation method, see Chapter 7, "Stated Preferences" in *Project and Policy Appraisal: Integrating Economics and Environment* (Pearce *et al.*, 1994). For more in-depth presentations, see Mitchell and Carson (1989) and Cummings *et al.* (1986).

2. See Georgiou *et al.* (1997) for additional references and an annotated bibliography.

3. Assignment of such answers to the "no" category is consistent with the recommendations of the report of the US National Oceanic and Atmospheric Administration's Expert Panel on the Contingent Valuation Method (Arrow *et al.*, 1993), and this practice is followed in many large CV surveys conducted in the United States. For further discussion and a theoretical treatment of ambiguous or "don't know" responses in contingent valuation studies, see Wang (1997).

4. A CV researcher is generally engaged by a client to estimate (a) the benefits of a project, and (b) how these benefits would change if different prices were charged. At the time that a CV survey is undertaken, the researcher typically does not know the actual cost of the project, either because the cost analysis is being done simultaneously, or because there are several variants of the project or different service levels being considered. In the latter case the results of the CV survey may be used to inform the design process. If a specific project is implemented, the client may know generally what would have to be charged. In this case, the client may care more about using the results of the CV survey to accurately predict revenues than economic benefits. In this case, the use of low referendum prices to develop better benefit estimates may serve little purpose from the client's perspective, and may even be deemed wasteful.

5. I use the term "ethics" here to refer to the domain of thinking or discourse that is concerned with what is good or right. This is discourse involving the use of terms concerning what "should" or "ought" to be done, as distinguished from private bargaining about interests (MacRae and Whittington, 1997).

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