Contingent Valuation Focus Groups: Insights From Ethnographic Interview Techniques

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Despite the many important uses (and potential abuses) of focus groups in survey design, the CV literature presents few guidelines to aid moderators in their interaction with focus group participants. This paper draws on the theory and practice of ethnographic interviewing to introduce general guidelines that can improve focus groups as an aid to CV research. The proposed guidelines illustrate types of questions that should reduce speculation and moderator-introduced bias in focus group responses, and improve the correspondence between focus group responses and actual behavior. The paper illustrates these ethnographic guidelines through a CV application concerning watershed resources.

The contingent valuation (CV) method uses survey questions to elicit people's preferences and values for public goods. It is one of few methods available to derive willingness-to-pay (WTP) measures for non-marketed environmental goods, and the only method capable of deriving non-use values for a wide range of environmental resources. However, the validity and accuracy of CV results is not guaranteed—it requires careful survey design, in which perceptions of survey respondents are taken into account (Mitchell and Carson). There are numerous reported examples of biases created by misinterpretation of survey scenarios—cases in which respondents do not interpret the survey in the same manner as the researcher (Diamond et al.; Desvousges et al. 1992; McFadden and Leonard; Stevens et al.; Schkade and Payne).

The validity of any contingent valuation survey depends, in part, on the absence of methodological misspecification. Mitchell and Carson (p. 246) describe methodological misspecification as a situation in which "the market described by the researcher is formally correct, [yet] one or more elements are inadequately communicated so the respondent does not perceive them in the way intended by the researcher." Methodological misspecification is likely unless the survey is preceded by "an intensive program of development, including the use of focus groups and pretesting of draft questionnaires (p. 249)." The NOAA Panel on Contingent Valuation (U.S. Department of Commerce, NOAA, p. 4608) expresses the same sentiment: "Pretesting of a CV questionnaire requires very careful pilot work plus evidence from the final survey that respondents understood and accepted the description and questioning reasonably well."

Researchers use focus groups to ensure that survey questions are understood correctly by survey respondents. Desvousges et al. (1984, p. 2-1) describe focus groups as "informal sessions in which a skilled moderator leads a group of individuals through a discussion of specific topics to discover their attitudes and opinions." Focus groups are used, among other things, to frame and define survey questions and to pretest questionnaires. The potential benefits of focus groups are well documented (Desvousges et al. 1984; Desvousges and Smith; Responsive Management; Morgan; Greenbaum). The combination of the CV and consumer research (e.g. Cox et al.; Bellenger et al.; Templeton; Peterson) literature provides an excellent introduction to focus group techniques. However, focus groups are not immune to misuse, bias and misinterpretation, particularly when conducted by inexperienced moderators (Desvousges et al. 1984).

Despite the potential for bias in focus group re-

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sponses, the focus group literature provides few standard guidelines for conducting focus groups in CV survey design.[1] In addition, the literature fails to address important issues concerning the characteristics and consequences of different types of focus group inquiry. These issues include the bias-reducing—or, conversely, bias-generating—characteristics of different types of questions. If conducted improperly, focus groups can produce biased evidence to support nearly any position (Bellenger et al.) Although the literature warns against leading questions (Desvousges et al. 1984), bias sometimes originates from questions that are not obviously leading (Morgan). In addition, questions can elicit speculative responses not closely linked to behavior (Jenkins and Howard). This paper proposes general focus group guidelines that can be consulted by contingent valuation researchers. These guidelines, which are open to modification with further testing, offer at least partial solutions to the above mentioned problems, and a potential means to improve focus groups as an aid to CV research.

Anthropological research offers an approach that can contribute to general guidelines for focus group questions and interaction—the ethnographic interview technique. Ethnographic techniques, as they have been applied by anthropologists and sociologists, create a picture of how the respondent views and categorizes the surrounding world (Spradley), including natural resources. This picture is based on revealed concepts expressed in the respondent's terms, thus reducing bias created by expressing a respondent's ideas in the researcher's *a priori* classification and language structure (Boas). Some of the goals of ethnographic inquiry may be familiar to experienced focus group researchers. However, the CV literature currently provides few guidelines to aid researchers, experienced or inexperienced, in achieving these goals.

The following sections introduce the theory of ethnography, and propose focus group guidelines drawn from ethnographic theory, previous research, and field experience. The paper then discusses previous applications of ethnographic techniques to survey design, and the implications of this research for contingent valuation. Finally, ethnographic guidelines for CV focus groups are applied to public preferences for watershed management.

[1] In addition, evidence provided by a recent survey of CV researchers suggests that most do not use focus groups (Walker and Hoehn). This reluctance to use focus groups may be due, at least in part, to the lack of guidance regarding CV focus group techniques.

Ethnography and the Ethnographic Interview—An Introduction

Ethnographic techniques are founded on the idea that standard interview techniques often overlook shared assumptions, contextual understandings, and common knowledge that allow respondents to understand the meaning of questions and answers (Spradley; Lazarsfeld; Mishler). Ethnographic techniques were developed to allow researchers to describe other cultures, while minimizing bias introduced by preconceived ethnocentric concepts. Ethnography strives to describe native ideas and experiences from the native point of view, rather than through the preconceived notions of the researcher (Spradley).

Ethnography is based on the premise that naming and classifying things is a fundamental principle of human cognition and understanding. Through the process of naming and classifying significant objects, experiences and ideas, the individual simplifies a complex world into a set of meaningful categories (Tyler; Frake 1977). An individual creates categories, or taxonomies, around things that 'make a difference' in everyday life. Taxonomies are dynamic, and are based on the individual's experiences. They express the individual's view of his natural surroundings, and form the often implicit foundation for observable behavior and decision making (Blumer). Through the study of these taxonomies, the researcher seeks to obtain a better understanding of how people perceive, understand, and attempt to control their environment (Frake 1962).

Although both researcher and respondent may speak a similar formal language (e.g. English), a respondent's *familiar* language—the language informed by, and linked to his or her experiences and behavior—may involve definitions, understandings, and implicit meanings not shared by the researcher. In fact, many research interview methods unintentionally encourage responses that mirror the language and classification system expressed by the researcher (Mishler). Respondents accordingly attempt to translate their familiar language and classification systems to be consistent with those expressed by the researcher. This translation biases participant responses and interview results (Spradley; Fetterman). In contrast, ethnographic interviews distinguish between the researcher's familiar language and classification system, and that of the respondent. They seek to draw out the contextual understandings, shared assumptions and common knowledge upon which a respondent's answers are based, without relying on prior as-

sumptions about how he views, defines, or classifies things (Spradley).[2]

The distinguishing feature of the ethnographic interview lies in the type of questions asked by the interviewer.[3] At risk of considerable oversimplification, the many purposes of ethnographic questions may be summarized as follows: Ethnographic questions are used to elicit the perceptions and knowledge that guide behavior, while discouraging individuals from translating this information into a form corresponding to the researcher's revealed understanding and language. Ethnographic questions are also designed to elicit responses based on respondents' past experiences. This reflects the ethnographic assumption that responses grounded in past experience will better predict future behavior than those grounded in attitudes or opinions, which may or may not influence behavior (Jenkins and Howard). Although this idea has not found its way into the CV focus group literature, it is not new to the CV literature. For example, Cummings et al. observed that attitudinal [CV] questions often perform poorly as indicators of behavior, when compared to questions based on experience or intended behavior.

From an economist's perspective, ethnographic methods offer a means to improve the quality and reliability of CV results, by assisting researchers to minimize bias in focus group observations. In addition, ethnographic guidelines can help researchers distinguish questions that elicit useful, predictive responses from those that elicit speculation, confusion, or responses based on abstract attitudes rather than a "meaningful intention" (Cummings et al.) to actually behave in a specified manner. This should lead to more reliable and accurate communication between researchers and survey respondents, and provide researchers with a better grasp of the often subtle perceptions and assumptions that determine how respondents will interpret a CV scenario. Accordingly, researchers will be better able to construct valuation contexts and scenarios that are interpreted (by respondents) in the intended manner.

Ethnographic methods also help to identify (often qualitative) aspects of people's utility functions that may affect quantitative CV results. These aspects may include information concerning whether and how various environmental resources contribute to personal utility, and what familiar terminology potential respondents use to identify and discuss these contributions to utility. Such information may be critical to designing CV surveys which ensure that respondents' valuation includes all relevant aspects of utility, including various forms of use and non-use values as may be consistent with research objectives.

"Ethnographic" Guidelines for Contingent Valuation Focus Group Questions

The following guidelines are based on the theory and practice of ethnographic interviewing. They are meant to illustrate types of questions that can reduce translation bias in the CV focus group, and improve the correspondence between focus group responses and real economic behavior. Each proposed guideline is offered along with a brief theoretical justification and an explanation of how it may be applied to the CV focus group.[4]

a] To avoid translation bias and miscommunication, express focus group questions in the language revealed by participants.

The ethnographic technique makes the explicit assumption that the respondent's familiar language and frame of reference are intertwined (Spradley). If focus groups are conducted using terms or definitions unfamiliar to participants, then responses will not accurately represent participants' frames of reference. Using language unfamiliar to the respondent invites translation and speculation, whereas the use of a respondent's familiar terms and definitions maintains a focus on the respondent's frame of reference (Merton et al.). This

[2] The basic theoretical constructs underlying ethnographic inquiry are also found in numerous other approaches to human cognition and behavior (MacFadyen), including numerous approaches in which environmental awareness and cognition are represented by a mental map or model of the external universe (Golledge; Kaplan). Although these approaches differ in many important respects, they all share the basic idea that "reality" is perceived and interpreted through a dynamic mental map—a conceptual matrix that encompasses experiential information, contextual and linguistic understandings, shared assumptions, and common knowledge (Golledge; Zimring and Gross). Ethnography is distinguished from these many theories in that it combines its theoretical approach with distinct methods meant to reveal the components of the mental map.

[3] Ethnography has a long history. Its literature yields many insights regarding interview techniques. Accordingly, this paper only provides an introductory summary (see Spradley; Fetterman; Hammersley; Hammersley and Atkinson; Garfinkel; Frake 1962; Tyler; Turner; Belk and Wallendorf; Plattner; and Freidenberg et al.).

[4] These guidelines are most useful in the early stages of focus group research, in which the CV researcher must discover resource perceptions held by focus group participants—perceptions that may not be familiar to the researcher. This situation is most similar to that for which the ethnographic method was designed (Spradley). The guidelines may be less applicable to focus groups used to pre-test a survey. However, it is important to conduct introductory focus groups prior to pre-test focus groups, in order to gain the knowledge necessary to write understandable and relevant survey scenarios (Desvousges et al. 1984).

frame of reference forms the basis of decisions and behavior, including decisions concerning how to answer contingent valuation questions.

Researchers often use focus groups to identify language that will effectively communicate desired information within a CV survey (Desvousges et al. 1984). However, there is a difference between a question that elicits familiar language used by respondents, and one that tests respondents' understanding of unfamiliar or technical terms predefined by the researcher. The latter ignores the important effect of implicit, assumed definitions' on participants' responses (Spradley). Garfinkel demonstrates that respondents will alter their revealed perceptions, language, and frames of reference to incorporate unfamiliar phrases and pieces of information introduced by the researcher, even when the information disagrees with previously held beliefs. This has important implications for CV research, for if the language of a CV question alters respondents' existing frame of reference, the resulting econometric models may provide biased estimates of utility parameters. Indeed, a temporary frame of reference (formed around unfamiliar language of a CV survey) may cause a respondent to "reveal" contributions to utility that are absent from his/her true and permanent (although dynamic) frame of reference.

Recent contingent valuation research suggests that familiarity with the good being valued and with the survey scenario is critical to meaningful responses (Cummings et al.). Accordingly, it is important that CV focus group researchers learn the familiar language used by respondents to describe the good being valued, rather than seeking to teach potential respondents the language of experts, or to test participants' comprehension of predefined survey terms. Although respondents may be able to learn unfamiliar language during the course of a CV survey, this "new" language may not correspond to respondents' pre-existing experiences and resource classifications. This creates a potential for bias that may be avoided by designing survey scenarios around familiar language revealed by focus group participants. If researchers accept the burden of using respondents familiar language to construct CV scenarios, the resulting surveys will more likely comply with existing guidance that surveys present familiar scenarios and goods.

b] To avoid hypothetical responses, bias, and speculation, 'focus' on participants' experiences.

One of the fundamental principles of ethnographic interviewing is that interviewers ask for "use and experience" rather than "meaning" (Spradley). Questions that ask for meaning, attitude, or opinion often contain a hidden judgmental component, as if a "correct" meaning exists, and the participant's knowledge of this correct meaning is being tested. Such questions encourage the respondent to speculate as to what meaning the interviewer wants to hear (Spradley), engage in safe generalizations (Merton et al.), play unfamiliar roles (Axelrod), or otherwise respond in ways that offer little or no insight into behavior (Azjen and Fishbein).

The CV literature describes focus groups as "in depth discussion of specific topics to *discover respondents' attitudes and opinions*" (Desvousges et al. 1984, p. 2-1, emphasis added). However, most people possess innumerable attitudes and opinions of a weak, hypothetical, or speculative nature—attitudes and opinions that do not influence their behavior in any significant manner (Azjen and Fishbein). Attitude and opinion questions often fail to distinguish between attitudes and opinions of a hypothetical or speculative nature, and those that are grounded in familiar experience and behavior, and are therefore likely to influence and predict future behavior. Similar difficulties with attitude and opinion questions have been recognized in the CV literature by Cummings et al. Cummings et al. (commenting on CV survey questions) and the ethnographic literature (commenting on interview methods) reach similar conclusions: In order to encourage closer correspondence between responses (to survey or interview questions) and behavior, researchers should avoid attitude and opinion questions in favor of questions grounded in experience and behavior.

Questions grounded in experience ask respondents to reveal an understanding of resources developed through experience, and state how they perceive those experiences in their own terms. They ask respondents to link perceptions with their past experiences and behavior, thereby eliciting perceptions that motivate and predict actual behavior. Experience questions also elicit relevant perceptions, attitudes, and opinions—without causing participants to offer biased (Merton et al.), hypothetical, or speculative responses (Freidenberg et al.). In summary, experience-based questions help the CV researcher acquire the information needed to construct survey scenarios that will be interpreted in a desired, predictable manner.

Perrot-Maitre (p. 527) uses ethnographic questions to draw out experiences that illuminate the resource classification and behavior of Filipino farmers. The following are two typical examples

of question and answer sequences built around farmers' experience:

> Q: I noticed that farmers use pesticide for rice but not for corn. How come?
> A: I tried once spraying insecticide on my corn plants, but it was hard to do since corn plants are much taller than me. There was a time when I let my son do the spraying, but he got sick. After such accident, I suspended the practice. If there were insects or diseases in my corn plants, I just let them stay there even if there were many because [spraying] was hard and hazardous to my sons.
>
> Q: Have you experienced any other effects of . . . fertilizer on your rice plants?
> A: According to my own observation, when you apply too much fertilizer to rice plants [they] become succulent and soft. That's when pests get easily attracted and eat them. That's why I only apply fertilizer to my rice plants when they are about to produce grains.

Perrot-Maitre's experience questions elicit policy relevant categories and perceptions that were not shared by Filipino agronomy experts, and were for the most part unexpected prior to field interviews. The experience-based questions also illustrate a critical distinction between practices that farmers think are "correct" and those practices that they actually use.

The difference between "experience based" and "non-experience based" questions can be subtle. For example, Desvousges et al. (1984, p. 1–11) offer the following examples of focus group questions:

> Q: Have you personally or members of your immediate family actually experienced bodily harm or loss or injury to property due to hazardous wastes?
>
> Q: Do you believe in the possibility of personal loss or injury to yourselves as a result of hazardous wastes?

The first question concerns experiences. There is no implied right or wrong answer. The second question concerns a similar topic, but is not based in personal experience—it is based on an opinion of a hypothetical occurrence. In response, participants may speculate as to potential injury, even if such perceptions were not held previously. Also, there may be a silent implication that some answers are better than others. For example, a respondent may hesitate to express disbelief in the possibility of injury if he suspects that this is not the correct answer. However, the second question may be re-written in a form that draws on experience:

> Q: Have you heard of any possible injuries that might affect you as a result of hazardous waste? How has this information affected your actions, if at all?

Although the difference is subtle, the experience-based version is designed to discourage respondent speculation, by encouraging responses based on experiences and past behavior. Unlike the first version, it contains little suggestion that a correct answer exists, and is not based on opinions of hypothetical events.

CV focus groups are meant, among other things, to provide information that predicts specific behavior—how respondents will interpret and react to contingent markets described by survey scenarios. Ideally, this should be related closely to how respondents would react to the contingent markets were they to occur in the real world. As focus group responses become less grounded in experience, they become less likely to predict this behavior, and more likely to reflect abstract attitudes, or ungrounded speculation as to how respondents might behave (or might like to behave) in an unfamiliar situation (Jenkins and Howard). Without an experiential or behavioral foundation, attitudes and opinions are poor predictors of behavior (Azjen and Fishbein).[5]

Despite these potential problems, attitude or opinion questions may be unavoidable in cases were respondents have little or no direct experience with the resource in question. This is particularly relevant to CV, which relies on hypothetical markets and scenarios. Yet when discussing relationships between experience, familiarity, and the hypothetical nature of CV, it is important to note the distinction between hypothetical markets and hypothetical commodities (Cummings et al.). Hypothetical markets are an unavoidable characteristic of contingent valuation. If respondents had experience with markets for a given resource, there would be little need for CV. Yet it is possible to be familiar (or have experience) with a good, while having no experience with that good in a market setting. In such cases, researchers can ask experi-

[5] This does not imply that focus groups can tell researchers little about attitudes. However, it is important to note the distinction between eliciting attitudes and eliciting responses that will help the researcher predict behavior (such as the way a respondent will "behave" towards or interpret a CV survey). The psychological literature suggests that attitudinal questions can elicit attitudes successfully. The literature also argues that attitudes (elicited by attitudinal questions) perform poorly as indicators of behavior (Azjen and Fishbein; Cummings et al.).

ence questions regarding the good of interest, even though the market for that good is hypothetical.

Hypothetical commodities result when respondents are unfamiliar with (or have little experience with) the *good* being valued. In focus group research involving hypothetical commodities, experience questions may not apply, leaving attitude and opinion questions as the only option. However, it is just these cases (with both hypothetical goods *and* markets) that present the greatest problems for the CV method in general—problems involving sensitivity of WTP responses to slight changes in question wording, the time available to answer the survey, or the amount of information provided (Cummings et al.). This suggests that in cases where no experience (with the *good* addressed in a survey) exists, respondents' familiarity with the good might be sufficiently low to render CV and/or focus group techniques unreliable.

c] To understand how participants perceive resources, learn how they categorize resources.

Desvousges et al. (1992) state that reported WTP to prevent the death of 2000 migratory birds is the same as that to prevent the death of 20,000. One interpretation of this result is that respondents may have interpreted the programs as being essentially the same (NOAA): 2000 birds are placed in the same resource category as 20,000 birds (for example, the category of 'a small percentage of the total number of birds'). Hence, respondents view programs to save the two groups of birds as identical. This illustrates the potential importance of respondents' categorization of resources. Questions that elicit respondents' categorization are fundamental to the ethnographic approach (Spradley). Such questions draw out relationships between meaningful terms and experiences, including natural resources. For example, category oriented, "structural" questions (Spradley) might be used to determine whether respondents place 2000 and 20,000 birds in identical resource categories.

In their simplest form, structural questions ask: "What different kinds of X have you experienced?" or "Is X a type of Y?". Structural questions are critical to discovering potential respondents' perceptions of resources, because they are designed to discover how individuals simplify the world into meaningful categories (Blumer). They seek to learn about familiar groups into which respondents classify things, rather than superimposing "expert" classification systems onto respondents' resource perceptions. Under the assumption that resource categories guide observable behavior (Blumer; Henderson and Peterson), these categories also determine how an individual will approach, frame, and ultimately respond to a CV scenario.

Through the discovery of relevant resource categories, researchers may begin to learn how respondents perceive natural resources, without asking leading questions (Morgan). However, to determine the implications of a given set of categories, it is important to learn what difference a set of categories makes to participants, why a set of categories exists, and how categories interact. Two methods are used to discover this information. First, one may ask how resource categories have influenced behavior, through questions such as "In your past experience, how, if at all, has the existence of Resource X made a difference to you?" Such questions combine revealed categories with experience based questions, to help establish the link between experience, behavior, and revealed resource categories. Second, one may seek direct distinctions, or contrasts, between categories. This leads to the following guideline:

d] To understand the meaning, implications and attributes of different resource categories, discover participants' distinctions between resource categories.

Ethnographic questions seek attributes that distinguish, or contrast, revealed categories. These attributes are sought through questions that ask respondents to distinguish between categories that they have already identified, under the assumption that the relevant attributes of a category can be discovered by finding its relation to other categories (Spradley).

"Contrast questions" may take a form such as: "In your experience, what is the difference between X and Y?" Through these questions, the researcher discovers category attributes that are relevant to respondents, and begins to learn the reasons why specific categories exist (Spradley). CV researchers may find contrast questions particularly important, in that they allow the discovery of attributes which distinguish various resources, and thereby define different goods. By focusing on the distinction between familiar categories, CV researchers may identify significant resource characteristics. Emphasis on familiar categories and characteristics should improve CV surveys, because survey scenarios based on familiar resource characteristics are more easily understood by respondents. Conversely, emphasis on unfamiliar or hypothetical characteristics could lead to biased and/or speculative focus group responses.

By using a combination of experience questions, category (structural) questions, and contrast questions, the researcher can elicit resource perceptions and classifications that influence behavior. For ex-

ample, Perrot-Maitre uses a combination of experience, category-based, and contrast questions to draw out shared farmland perceptions of Filipino farmers (Perrot-Maitre and Weaver, p. 525). Examples of her questions include the following:

> Q: I would like to know about the different kinds of soil in your rice fields, could you describe them for me? (Structural question)
> Q: You have just told me that there are three types of soils-*bahason*, *pilit*, and *nanindot*. Could you tell me about the differences between *pilit* and *bahason* soils? (Contrast Question)
> Q: When you cultivate rice, do you do it the same way in all types of soil, or are there differences? (Experience-based contrast question)
> Q: Are all *bahason* soils the same, or are there different types? (Structural question)

Perrot-Maitre's interviews reveal that local farmers share a complex understanding of different categories, attributes, and uses of farmland. The revealed farmland categories do not match those held by local farmland experts. Whereas Perrot-Maitre's respondents distinguish between the characteristics and optimal use of many different types of soil, local agronomic policy does not recognize these same distinctions. Such findings are critical to CV survey design, as survey questions based on non-familiar categories (such as those revealed by policy experts) may misrepresent respondents' understanding of resources, and will affect survey responses.

e] Distinguish between experiences and categories that are shared by participants, and those that are not shared.

In order to avoid methodological misspecification, CV respondents must share a common understanding of resources being valued (Mitchell and Carson). The focus group moderator must determine where individual experiences and categories merge into shared perceptions and where they diverge, for only shared perceptions can form the foundation of survey questions that are understood similarly by all potential respondents (Resnick). If no shared categories and definitions can be found, then methodological misspecification is likely in the resulting survey. A well-run focus group allows participants to agree, disagree, and comment on statements made by other participants, revealing where perceptions and understandings are shared and where they differ. Our experience suggests that the combination of ethnographic techniques (originally developed for individual interviews) and focus groups (developed for group settings) is able to elicit and distinguish individual and shared perceptions.

However, the focus group format can also complicate ethnographic elicitation of relevant taxonomies. Since ethnographic techniques were designed for use in individual interviews, integration of these techniques into a group setting can create difficulties in certain situations. For example, a large number of competing individual classification schemes might confuse the search for distinct individual or shared taxonomies. This might be expected in focus groups dominated by participants whose perceptions and experiences differ by a large degree, or in focus groups with a large number of participants. One potential solution to this problem would be to replace focus groups with a series of individual ethnographic interviews, or to use a combination of individual interviews and focus groups.[6] For example, individual ethnographic interviews could be used to obtain an understanding of the perceptions and familiar language of different respondents. Subsequent ethnographic focus groups would then address the perceptions and language revealed in individual interviews, to distinguish shared and non-shared concepts. In this way, the combination of individual ethnographic interviews and ethnographic focus groups might provide better information than either technique used alone. This issue has not been addressed in the ethnographic or focus group literature, and presents an avenue for future research that could have significant implications for CV survey design.

Linking Ethnographic and Quantitative Survey Methodologies: Evidence From Past Research

It is difficult, if not impossible, to statistically prove that focus groups lead to improved contingent valuation results (U.S. Department of Commerce, NOAA Panel). Yet despite the lack of statistical proof, there is a growing consensus among CV researchers that focus groups are an important part of survey design (Desvousges et al. 1984; Walker and Hoehn). Likewise, there is no statistical evidence that ethnographic focus group guidelines lead to improved CV results. However, ex-

[6] Other possible solutions include decreasing the number of focus group participants, or conducting each focus group with a relatively homogeneous set of participants (although, in the latter case, it would be important to maintain heterogeneity among different focus groups). In our experience, both these techniques help simplify the ethnographic task of sorting out individual and shared perceptions.

isting theoretical and practical evidence from various disciplines lends support to the proposed ethnographic focus group guidelines.[7]

Researchers working in many fields of applied survey research have conducted ethnographic study as an early stage of survey design (Freidenberg et al.; Jenkins and Howard). This research offers evidence supporting the use of ethnographic techniques in survey design and interpretation. For example, Freidenburg et al. use both qualitative and statistical methods to argue that the combination of ethnographic methods and quantitative surveys provide more and better information than either technique used alone. Durrenberger's study of the common property shrimp industry illustrates ways in which ethnographic insights help interpret otherwise misleading statistical analysis. Jenkins and Howard's (p. 2) review of the medical anthropology literature concludes that "results are less dependable [when] elicited in surveys" that are not combined with prior ethnographic information. Schoepfle et al. (p. 294) argue, using both qualitative and quantitative means, that "ethnography [can] serve as a source of appropriate wording, structuring and ordering of questions, hypothesis testing for quantitative approaches, and as a source of further explanation for survey results."

In cases where ethnographically informed survey results are compared to those based on surveys with no ethnographic foundation, the former are often more predictive, more valid, and/or better suited to policy making (Jenkins and Howard; Freidenberg; Durrenberger; Schoepfle et al.; Bjarnason and Thorlindsson; Guyer and Lambin). Future work by CV researchers may assess (statistically) whether the demonstrated benefits of ethnographic techniques also apply to contingent valuation survey results. However, like most (if not all) survey design methods, it is impossible to provide statistical evidence that ethnographic methods will *always* improve survey results (Freidenburg; Schoepfle).

Application and Discussion- Public Preferences for Watershed Management

Despite the evidence gathered from other disciplines, there is no mention of ethnographic guidelines (or guidelines of similar intent) in the CV literature. To help fill this gap, this section offers qualitative evidence supporting the proposed ethnographic guidelines as tools in CV survey design. The principle benefit of ethnographic guidelines is to outline an approach for the elicitation of perceptions that are common to respondents, yet unknown or uncommon to the researchers. Accordingly, the evidence presented focuses on differences between "expert" categories, attributes and definitions (some used in previous survey instruments) and those revealed through ethnographic focus groups.

Our experience comes from designing a dichotomous choice CV survey addressing public preferences for watershed management. We used focus groups to study watershed resource values and attitudes towards watershed management. Eight focus groups were conducted in which ethnographic guidelines were strictly observed. Prior to these focus groups, fifteen individual ethnographic interviews were conducted, in order to gain experience with the ethnographic technique and a preliminary understanding of respondents' perception and categorization of watershed resources. Following the ethnographic interviews and focus groups, we conducted six pre-test focus groups and over twenty pre-test interviews. Pre-tests offered validation to ethnographic focus group results.

Using ethnographic guidelines in focus groups elicited language and framing information that allowed researchers to address category-based framing issues in draft surveys. In addition, ethnographic questions revealed participants' experiences and perceptions of watershed resources. As might be suspected, participants' revealed understanding of watershed resources did not always agree with scientific or expert descriptions of the resources in question. Perhaps more notable, revealed perceptions did not often match resource descriptions found in previous CV survey instruments. This suggests that the perceptual and categorical information revealed by ethnographic focus groups might not have been revealed by focus

[7] Ethnographic techniques have been applied successfully in many disciplines, including sociological and marketing focus group analysis (Morgan; Templeton), resource economics (Perrot-Maitre and Weaver; Schoepfle et al.; Durrenberger) and economics (Belk and Wallendorf). The ethnographic focus on experience is mirrored in sociology (Morgan), cognitive and environmental psychology (Rosch and Lloyd; Kaplan and Kaplan), and consumer research (Higginbotham and Cox). The ethnographic focus on categories and their defining attributes is common in various disciplines, including environmental psychology (Kaplan; Garling and Evens), the psychology of decision making (Henderson and Peterson), and economic psychology (Grunert). Such concepts also form a foundation for a variety of modern cognitive theories (Rosch and Lloyd), and are implicit in framing issues as developed in the CV literature by Tversky and Kahneman and Kahneman and Tversky.

groups conducted without ethnographic guidelines.[8]

Although ethnographic focus groups revealed important information regarding all resources and regulations addressed by the survey, (including, among others, open space and developed land, public access sites, and water treatment regulations) the example presented here involves perceptions of water quality. The focus group results corroborate David's results concerning public water quality perceptions—that they are based on sensory indicators, and not on "technical" safety levels. A quote from Cummings et al. (1986, p. 56) illustrates the importance of such findings: "Consider, for a particular river, a change in water quality from boatable to fishable levels. One can only speculate as to the mental image in the mind of any particular subject: an image of 'murky' vs. 'clear' water, or an image of a person sitting in a boat, unused fishing rod in hand vs. the angler fighting a hooked fish in a pristine stream. Surely, this . . . perception of the CVM commodity would be relevant for any preference-revealing value offered by the subject." Our focus group experience suggests that previous CV water quality representations, often based on objective safety data, would have misrepresented the water quality perceptions of our survey respondents (residents of southwestern Rhode Island). This potential misrepresentation was evident on a basic perceptual level, as illustrated by experience-based ethnographic questions.

Mitchell and Carson and Smith et al. present examples of standard water quality ladders—scales used to represent water quality in CV survey instruments. These water quality ladders are based on EPA descriptions and estimates of the uses that various levels of water quality can support. The ladders are based on the division of water quality into various use categories, such as drinkable, swimmable, fishable, and boatable. The implicit assumption is that peoples' perceptions of water quality (i.e. levels of water pollution) are uniquely linked with the identified use-categories. However, ethnographic focus group questions revealed that participants did not uniquely link these categories to water quality.

When considering terms such as "swimmable", "fishable" and "boatable", participants described both pollution and non-pollution aspects of water. Perhaps more troubling, reactions to these descriptive terms differed significantly among respondents. Non-pollution concerns included whether water was pleasant or otherwise satisfactory for the activity in question. For example, "swimmable" water was determined, in part, by such factors as whether the water was cold or warm, "tea-colored" or clear, whether there were many motor craft present on the particular water body, or whether the bottom was muddy. To some of our participants, improvement of water quality to "swimmable" levels would imply decreasing the number of motor boats, or changing existing (and often naturally occurring) bottom conditions. Such concerns are clearly relevant to survey design, since respondents' varying WTP for non-pollution aspects of "swimmable" water could confound or bias CV estimates of true WTP for pollution reduction.

Ethnographic focus group inquiry further revealed that focus group participants viewed and thought about water quality (as defined by the level of water pollution) in terms of the symptoms of pollution that they had experienced—symptoms that included levels of algal growth, foul smells, visible scum and trash. Participants identified different ranges of water quality according to associated symptoms of pollution. Symptoms of pollution were then associated, as appropriate, with various levels of water safety. Accordingly, when symptoms of associated levels of water pollution were presented along with descriptions of the water's safety level (i.e. "Safe for Swimming"), participants perceived a direct and unique link to different levels of water quality.

The following excerpt was transcribed from the audio-taped record of an ethnographic focus group (5 participants, 9/24/92). It has been edited slightly to allow presentation in limited space, while retaining the characteristic aspects of the original transcript.

Q: What different kinds of surface water have you seen around here?

Respondent #1 (R1): Mostly good, I guess, I do canoeing and things . . .

Respondent #2 (R2): It's pretty scummy most of the time.

Q: So, we've got one "good" and one "scummy", what's the difference?

R2: Well, there's algae, you see things (in the water).

R1: Oh yeah, there is a lot of algae . . . (all participants indicate agreement)

R3: And you don't always know what the scum is . . . if its oil or something, that's worse than

[8] The discrepancy between resource perceptions could also have been caused by differences in the survey populations.

a little algae
R2: It's algae—lots of algae, the Narrow River has lots of problems.
R1: Oh right (when speaking of good water quality) I was thinking of the Wood River.
Q: What difference does this make to you . . . when you see this algae?
R1: It means overdevelopment.
R2: It tells me that there's a lot of septic systems going into those areas. I mean, North Kingstown doesn't even have a sewage system . . . it's all septic systems. North Kingstown's had a problem for a long time with all the development and septic systems. How long can you dump stuff into the ground without it effecting something?
Q: So other than algae, what other effects of septic systems have you experienced?
R1: Well, I like canoeing and swimming in the Wood River, but I guess that you sort of know not to drink it, even though its fresh water. I mean, its not like it would be horrible but I wouldn't deliberately drink the water I was swimming in . . . algae is a sign of overdevelopment.
R2: I don't like algae, cause its mucky, but algae means there is something feeding on something else, and I don't like to think about what it might be feeding on . . . you know, if I'm swimming in it. (Participants continue to talk about the algae/septic system issue.) . . .
Q: Are there any other types of water pollution that you've seen around here?
F4: Trash—you know, human trash. (Participants all agree that they have seen trash.)
R3: Yeah, you see trash washing up on the shore . . .
Q: Do you see this trash everywhere, or is it only in certain locations?
R2: It's pretty much everywhere.
R4: But it's worse in some places than in others.

This excerpt reveals numerous aspects of participants' perceptions of water quality, and illustrates the basic mechanics of ethnographic focus group interaction. Although it is difficult (and perhaps misleading) to draw conclusions from such a small excerpt, one possible interpretation of this excerpt is as follows: Participants seem to perceive two primary categories of water, "good" and "scummy", or polluted. These categories are defined by the symptoms of pollution that they have all experienced—algae. The level of algae indicates (to these participants) activities for which the water is safe. The participants further indicate that pollution (identified by algae) is associated with septic systems, and perhaps with septic systems in specific locations. At least one participant implies that the Wood River does not have an algae problem, and thus has "good" water quality. Another symptom of pollution is trash in the water. However, the importance of algae as a primary symptom of water pollution is supported by the fact that even after the moderator asks for other (non-algae) symptoms, participants quickly return to experiences of algae. Although some of the responses are attitudes or opinions, they are attitudes grounded in experience. This illustrates the ability of ethnographic interaction, at least in this instance, to elicit relevant attitudes and opinions without asking attitude and opinion questions.

This short excerpt illustrates the type of ethnographic interaction used to derive the results described in this section. All questions are based on experience and participants' revealed language. Each question seeks to elicit, define, or determine the significance of the different ways in which the participants perceive and categorize water quality. Even from this short transcript, one can begin to see relationships between experiences, resource classifications, and behavior—relationships that will determine how respondents will interpret and respond to survey questions. However, as in all focus groups, the results of one session (particularly one small segment of one section) cannot be assumed to represent a larger population. This excerpt is not meant to "prove" the value of ethnographic guidelines, or the results presented earlier in this section. Rather, it is meant to illustrate a limited example of ethnographic focus group interaction. Appendix One presents further examples of ethnographic questions used in focus groups.

Our experience suggest that focus group questions based on the ethnographic approach can provide detailed and appropriate pictures of how potential respondents perceive and frame resources. Accordingly, the ethnographic approach can aid CV researchers in designing valuation contexts or frames that more closely match those held by respondents. Information gained through ethnographic techniques can also help researchers interpret CV results. For example, respondents might express a WTP to reduce algae and make a water body safe for swimming, with the implicit understanding that this improvement would require a reduction in underlying pollutant loading. Knowledge of this implicit understanding, revealed through ethnographic or similar techniques, would help researchers interpret the WTP response, and make informed policy recommendations. More generally, information gained through ethnographic techniques can help researchers ensure that

policy recommendations based on CV survey responses reflect the actual preferences revealed by those responses.

Conclusion

This paper proposes guidelines for improving focus groups used in contingent valuation research. The proposed guidelines are meant to complement existing techniques. They are not meant to be final, comprehensive, or compulsory. Rather, they are meant to provide a starting point for research into techniques and guidelines that promote an understanding of respondents' perception, understanding, and categorization of natural resources—information required to construct CV scenarios that will be interpreted in the desired manner. Ethnographic guidelines can provide a good starting point for this research, in that they focus attention on respondent's familiar understanding of resources, an understanding other interview techniques can fail to recognize.

Although ethnographic techniques have a long history in social research, they are new and largely untested elements of CV survey design. The benefits of these techniques have yet to be established in a statistical manner (e.g. a statistical comparison of WTP estimates using surveys designed with and without ethnographic focus groups). Other important (and unanswered) questions involve the distinctions between, and best uses of, ethnographic focus groups and individual ethnographic interviews, and the resources and/or settings to which ethnographic techniques are most applicable. Future research into these areas is important, as it seems likely that the applicability of the various ethnographic guidelines and/or techniques will differ depending on the subject matter and situation.

Future research might also assess the extent to which the proposed ethnographic focus group guidelines are commensurable with other methods used to improve CV surveys, such as cognitive survey design techniques (Wheeler and Lazo). Ethnographic guidelines and cognitive survey design techniques address similar issues—they identify how respondents interpret survey scenarios, and attempt to discover the differences between the perceptions and language of respondents' and those of the researchers. Cognitive survey design is a relatively recent idea—the integration of cognitive psychology-based techniques into the survey design process (Wheeler and Lazo). Included in the category of "cognitive survey design techniques" are focus groups, pretests, think-aloud interviews, and verbal protocols. Further research could reveal whether the combination of ethnographic and cognitive survey design techniques would improve focus groups used as part of cognitive survey design.

Focus groups, with or without ethnographic guidelines, are not the solution to every problem in CV research. Ethnographic guidelines cannot replace an experienced focus group moderator. Indeed, moderating an ethnographic focus group can be more difficult than moderating a non-ethnographic focus group, due to the constraints imposed by ethnographic guidelines. However, such guidelines can help researchers identify scenarios that better approximate respondents' resource perceptions. This may reduce framing biases in CV surveys, as well as respondent protest bids or confusion.

At the very least, the proposed ethnographic guidelines suggest areas of focus group methodology that CV researchers may find worth exploring. They also call for a reversal of the common research and interview format in which the researcher knows the right way of thinking, placing the burden on respondents to understand the researcher. The ethnographic approach and guidelines place the burden on the researcher: It is the researcher's task to understand how resources matter to respondents, and to frame survey questions in a context familiar to respondents. This approach may well ameliorate some concerns raised against CV results.

Appendix One

Examples of Ethnographic Questions

All example questions are drawn from focus groups used in the design of the watershed management survey.

Descriptive Questions: Used to draw out experience and language.

Grand Tour	"I would like to know about the different types of water in your local area. Please describe them for me."
Mini-Tour	"Explain to me what you do when you go boating."
Experience	"What different types of local pond and river water have you had experience with?"
Native Language	"Please explain to what the phrase 'water pollution' refers?

Structural Questions: Used to draw out relevant categories.

Verification	"Are there different types of water near your home?" "Are there different types of places to go swimming, or are they all the same?" "You mentioned that New Hampshire has high quality water. Then is it fair to say that Rhode Island does not have high quality water?"
Cover Term	"Have you experienced different kinds of pristine water?"
Included Term	"Is trash a kind of water pollution?"

Contrast Questions: Used to draw out distinctions between categories.

Contrast Verification	"Is it fair to say, then, that all Rhode Island water is lower quality than all New Hampshire water?"
Dyadic Contrast	"In your experience, what is the difference between high and low quality water?"
Triadic Contrast	"Why does it matter to you that some people have well water, others have artesian well water and still others have water from public systems?"
Rating Contrast	"Which type of water is best for swimming?"

See Spradley or Fetterman for further examples of ethnographic questions.

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