Biases, prejudices and soufflé

Or: What type of preferences should guide policy?

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ABSTRACT

We were motivated to write a paper about the different sources of bias in conventional preference elicitation studies reported in economics journals. In order to do this, we were forced to consider the type of preferences that we think are the most appropriate for informing resource allocation decisions. And to do this, we have developed a simple taxonomy which classifies preferences according to conditions of consistency, information and logic. We set out our position (which requires us to measure what we call true rather than actual preferences) and contrast it with the position adopted by mainstream economics. We then argue that the mainstream view requires that preferences are free from *bias*, in which case measured preferences coincide with actual ones. But according to our view, preferences need also to be free from *prejudice* (a systematic difference between actual and true preferences resulting from an individual taking account of factors that are considered to be normatively irrelevant) and *soufflé* (any further systematic difference between actual and true preferences; for example, when a respondent uses the wrong information or logic). This paper is in the true spirit of HESG in that it represents work that is very much in progress. It has only really just begun to take shape (as you'll notice from the incomplete references, for example) but we really would value your comments at this early stage.

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INTRODUCTION

Much of the debate in the economics literature has focused attention on the normative question of "what is the role of individual preferences in economic analysis?". To a welfarist, an individual's preferences or utilities provide an all-inclusive measure of that person's well-being, whilst to an extra-welfarist, they provide only part (albeit an important part) of the information that is relevant in assessing individual well-being [Sen 1977, 1993, Culyer 1989, 1990]. But this distinction is not our primary concern here. Neither is the distinction between *ex ante* and *ex post* preferences, which has also been the subject of intense debate amongst economists [Weinstein, Shephard and Pliskin 1980, Ulph 1982, Broome 1994]. Rather, we are concerned with two equally important but less debated questions: 1) what type of preferences are appropriate for informing resource allocation decisions?; and 2) what methods (if any) are capable of eliciting the most appropriate type(s)? The first of these questions is clearly a normative one, since it requires us to specify normative conditions that we believe preferences should satisfy. However, an answer to the second one can be provided, at least in principle, by considering the empirical evidence relating to the nature of individual preferences.

We must stress that the discussion of both of these questions is in the context of using information on people's preferences to inform public sector resource allocation decisions. We recognise that an individual's *actual* preferences, which motivate his or her behaviour in real-world situations, need not satisfy any normative conditions. But our interest lies in how to define and then how to elicit the individual's *true* preferences, which we define as the unique set of preferences which ought to be used to inform policy decisions taken on behalf of that individual.

Our distinction between actual and true preferences highlights that the underlying quantity that we wish to measure (in our context, a strength of preference over unfamiliar scenarios) is not itself subject to any direct normative constraints, but that the conditions under which it is legitimate to measure this quantity, as well as the metric by which it is to be measured, may well be subject to normative constraints.

WHAT TYPES OF PREFERENCES ARE THERE?

We can classify different types of preferences along three dimensions: i) consistency conditions; ii) information conditions; and iii) logic conditions (see Figure 1). Consistency conditions assess whether or not preferences are self-contradictory and can be explicitly specified in terms of a normative model of the structure of individual preferences. The strength of the conditions range along a continuum, from no requirements for consistency at all, through the barest minimum degree of consistency (for example, dominance), through moderate transitivity conditions, and on to strong separability conditions over time and states of nature. For the sake of exposition, we define this continuum according to three categories: no conditions, moderate conditions and stringent conditions. Consistency conditions may allow for a degree of random error or

imprecision in individual preferences, in which case an "average" of preferences elicited in different circumstances may be considered a reasonable approximation, but they do not allow for *systematic* patterns of error or inconsistency [Hey and Orme 1994, Loomes and Sugden 1998].

Information and logic conditions assess the quality of the cognitive processes that lie behind individual preferences. Both conditions require that individuals correctly interpret the information and understand the logic behind their responses. The strength of information and logic conditions also lie on a continuum, this time running from the actual amount of information or logic available to the individual in real-life decisions, through a more refined level which results from a more in-depth consideration of the issues, and on to the condition that preferences must be based on the "best" level of information and logic currently available. For simplicity, we also distinguish between three levels of information and logic: actual, refined and "best". In general, the refined level will be cognitively less demanding than the "best" level. The "best" level is in quotation marks to indicate that multiple expert opinions are possible about what "best" means, and also to acknowledge the point that there is no guarantee that the experts information or logic really is better than the individual's in any objective sense.

To a large extent, the issue of information conditions overlaps with the issue of "ex ante" versus "ex post" preferences: ex post preferences use the "best" probability estimates, whereas ex ante preferences use the individual's actual estimates [Broome 1994]. However, it is important to note that information conditions may also relate to the range of variables that are contained in the information set, as well as their parameter values. For example, we might want to impose the condition that information should not be taken into account on certain personal characteristics, such as people's race, religion, gender and sexual orientation. Alternatively, we might allow such information to be taken into account, so long as the individual holds correct factual beliefs about people with these characteristics, and so long as she uses appropriate logic. Logic conditions are defined according to the reasoning that the individual engages in. This broad definition of logic includes any mathematical or statistical calculations that the individual makes, as well the logic of the economic, psychological, philosophical or any other kind of reasoning used by the individual.

In addition to consistency, information and logic conditions, we might also consider the possibility of *procedural* conditions that assess the quality of the elicitation process by which preferences are measured. These might include procedural guidelines about the professional status and independence of researchers, the size and representativeness of the sample, the design of questions, and the agenda for any interviews or group discussions. However, we have not included this class of condition in our taxonomy since they are conditions that are imposed on *research* into preferences, rather than on the resulting type of preferences themselves.

WHAT TYPE OF PREFERENCES DO WE REQUIRE?

Since preferences elicited for use in informing resource allocation decisions will often fail to satisfy even some of the weakest forms of the conditions outlined above, the question that arises is which conditions do preferences need to satisfy? Most economists require that preferences

satisfy moderate (and sometimes quite stringent) consistency conditions. All of the preference elicitation studies that we are familiar with have excluded some responses on the grounds of inconsistency, although how stringent this consistency test is varies enormously and results in as few as x% of respondents being excluded and as many as y% being excluded [Dolan and Kind 1996, Viscusi 1991].

Perhaps consistency conditions have found favour amongst economists because they appear to have a certain objectivity about them and can be used to define rationality. But even consistency conditions require the analyst to correctly *interpret* preferences. In the case of stated preferences for unfamiliar non-market goods, the analyst may well interpret the elicitation question differently from the respondent, and indeed differently from other analysts. This is manifested, for example, in the regular and persistent disagreements in the contingent valuation literature about whether or not particular stated preferences violate consistency conditions [Diamond and Hausman 1994, Carson and Mitchell 1995]. So we would argue that even consistency conditions require a degree of qualitative investigation into the psychological process of reasoning (or logic), and that economists regularly engage in tacit investigation of this kind when specifying models and interpreting data.

Despite a considerable theoretical literature both on incomplete information and on bounded rationality [Milgrom and Roberts 1987, Molho 1997], economists involved in empirical research have been more reluctant to impose information conditions [Bacharach 1986, Sugden 1991]. This might be because such conditions appear to violate the important normative principles of consumer sovereignty and freedom of choice. However, there is a long tradition in moral philosophy of including normative conditions in definitions of freedom and autonomy [Sen 1985, 1991, Miller 1993]. And whilst freedom and autonomy are indeed valuable, we would argue that their value is not well served by allowing prejudices and soufflé (see below) to distort those preferences that are to be used to inform resource allocation decisions. Rather, freedom and autonomy should be taken into account clearly and explicitly in economic analysis, either as separate values to be traded-off against other values or as ethical constraints on the value maximisation calculus [Sen 1993, Williams and Cookson 1998].

Economists have traditionally been even more reluctant to impose conditions on logic, perhaps because this really would require investigation into the reasoning that lies behind preferences [Simon 1986, Tarrant 1998]. All of this means that economists typically find themselves according to our classification in cell 311 where they are heard advocating quite stringent consistency conditions but are silent on the level or type of information or logic that preferences are required to satisfy. As you might already have guessed, we are a little uncomfortable about finding ourselves in this cell (although doubtless some of you would like to see us in a cell of some kind).

We argued above that definitions of consistency cannot exist in isolation of definitions of logic. And if this accepted, it might enable us to reach a more adequate consensus on what type of preferences are to be used. For example, if dominance is apparently being violated, then this might be considered an inconsistency if no (logical) reason can be given for the violation. Under such circumstances, we would be justified in excluding or laundering such preferences on the

grounds that we will not let people "shoot themselves in the foot" if there is no logical reason to do so. However, if a logical reason can be provided, and if this reason is consistent with a particular interpretation of the question being asked, then certain apparent violations of dominance might be considered to be consistent. In other words, we would still locate ourselves in a cell that requires some consistency conditions (but rarely very stringent ones) and only in conjunction with an intermediate level of information and logic. Therefore, our preferred cell would be 222 rather than 311.

WHAT IS THE NATURE OF INDIVIDUAL PREFERENCES?

The received wisdom amongst mainstream economists is that individuals behave as if they had clear, well-defined preferences over all the possible decision options they might face, which can be represented by a mathematical utility function [refs]. In standard economic models, attention is focused squarely on the budgetary and informational constraints facing individuals, and the preferences themselves are essentially relegated to the status of a (given) 'black-box' [refs]. It is simply assumed that each individual has an internally consistent set of preferences that will be "revealed" in market behaviour. Economists involved in eliciting *stated* preferences are clearly interested in the weights given to the different arguments in an individual's utility function, but largely they too have accepted the received wisdom, arguing that well-defined preference functions can be 'tapped into' by appropriate questions [refs]. An implication of this view is that if a respondent gives different answers to two questions, then the questions must have been different.

Therefore, economists involving in eliciting stated preferences tend to focus on ensuring that preference elicitation questions are formulated and understood as intended, arguing that any 'slip' could invoke a precise, thoughtful answer to a "wrong" question. Almost all of the preference elicitation studies reported on in health economics journals adopt this viewpoint [refs]. Some of these studies involve the extensive piloting of questionnaires or survey instruments to ensure that the study is designed, so far as the researchers can tell, in ways that are most appropriate at generating meaningful answers to the intended questions. However, the idea that people read their preferences off of some in-built master utility function is called into question by psychologists and by the many studies which have shown that seemingly subtle changes in question framing or problem structure can change the stated preferences of respondents [refs].

Such findings could be accounted for by a number of alternative views about the nature of individual preferences. An extreme view (or, more precisely, a view that is the polar opposite to that put forward by mainstream economists) is that behaviour is hardly ever motivated by preferences which would satisfy even the weakest of consistency conditions [refs]. Adopting this viewpoint would mean that responses in preference elicitation studies would merely be constructed "on the spot" by people. It seems to us that this would imply that there are no means by which to elicit preferences that would be useful to an economist seeking consistent preferences to inform decision-making (although even such highly constructed preferences could still say something about an individual's preferences in other situations).

However, we think that things aren't *that* bad for such economists (although a whole lot worse that most of them would recognise or admit to). It is our contention that, like most things in life, the truth lies somewhere in between the two extremes i.e. somewhere between preferences being well-defined and non-existent. And there are numerous examples, across a wide range of studies, which lend support to this hypothesis [refs]. Of course, the spectrum of possibilities that this view covers is wide given the enormous difference between the two extreme views. It seems to us that where an individual's preferences lie on this spectrum will depend on the decision context and will be largely determined by the extent to which they are familiar with the choices they face. When being asked for her preferences over different allocations of health care resources, for example, an individual's preferences are unlikely to be very clearly defined.

This suggests that: 1) elicitation procedures can help to shape an individual's preferences; and 2) it might be possible to find true preferences but only after deliberation and reflection that improves the individual's understanding of the decision and its implications. Many health economists appear to be increasingly aware of the first point and, as a result, are attempting to gain a better understanding of the cognitive processes that a respondent uses in order to arrive at her responses. In this way, they are better able to understand the *biases* (defined as the difference between measured and actual preferences) present in their survey data. But most are yet to grasp the fact that their data may still be contaminated by *prejudices*, which represent any systematic difference between actual and true preferences resulting from an individual taking account of factors that are considered to be normatively irrelevant. And even fewer appear to be alert to the contaminating effect of *soufflé*, defined as any further systematic difference between actual and true preferences, for example, when a respondent uses the wrong information or logic.

It is our contention that any study which does not provide a respondent with sufficient time to carefully consider her responses, as well as the opportunity to provide the (normatively appropriate) reasons underlying them, will not provide the type of stated preference data that we consider to be appropriate for informing resource allocation decisions. Therefore, this means that even the best designed telephone survey, which elicits hastily constructed (or spontaneous) preferences will be inappropriate. It also means that even the best designed postal survey will also be inappropriate, since, whilst it may allow for more deliberation on the part of the respondent, it provides no insight into the type or level of information and logic that is used.

The amount of time and opportunity that an individual should be given to think about a response to a particular question, and precisely how this is achieved, will depend on where her preferences are assumed to be located on the spectrum between well-defined and non-existent preferences, as outlined above. For example, when eliciting her preferences over states of health that she is familiar with, it might sufficient that she is provided with a "warm-up" exercise at the beginning of a one-to-one interview. To allow her to reflect upon her responses, she might be presented with a summary of all of her responses at the end of the interview (or even confronted with any apparent inconsistencies) and allowed to revise any or all of her answers in the light of this overview. She might also be presented with information about the experiences and preferences of those actually in the health states that she is being asked to consider.

In other contexts, for example when considering the principles upon which she would prefer to see health care resources allocated, it might be that a respondent is better able to articulate something approximating her true preferences if she is given much more time for the deliberation and reflection that is required. This could involve a pre-interview focus group meeting in which respondents discuss the issues and a post-interview feedback meeting in which they review their responses. Or it could involve a number of focus group discussions on the basis that more accurate representations of individual preferences will emerge from discussion and debate than without it. Or it might involve 'citizen's juries' whereby groups of people consider a particular issue in considerable detail (often including "evidence" from "expert witnesses"). It might be considered in some contexts (though we doubt that there are that many) that the type of preferences required are those that would only result from an infeasible amount of deliberation; for example, a full professional training in medicine, or economics, or some other discipline(s).

The collection and analysis of qualitative data is crucial if economists are to get a better understanding of individual preferences, and if the biases, prejudices and soufflé inherent in them are to be reduced (we guess most of you saw this bit coming). We recognise that this does not conform to the standard welfare economics framework, but then there is more to economics than this particular framework. For example, there are many economists who would deny that actual preferences represent underlying true preferences, pointing out that people sometimes prefer things that make them worse off, possibly as a result of incomplete information or bounded rationality [refs]. Seen this way, to recommend that health economists should aim to "get behind the numbers", is merely to suggest that they find out which preferences are the ones that are most likely to be make people better off [refs]. In any event, economics is not the only discipline that contributes to the study of preference elicitation. Psychologists, sociologists and philosophers have also contributed greatly to the area [refs] and there is much that we can learn from these disciplines.

CONCLUSION

In this paper, we have tried to classify different views about two methodological questions: 1) what type of preferences are appropriate for informing resource allocation decisions?; and 2) what methods (if any) are capable of eliciting the most appropriate type of preferences? Views on the first question vary along three dimensions, according to the strength of three kinds of normative condition: i) consistency conditions, ii) information conditions, and iii) logic conditions. Views on the second question vary along a single dimension, according to how difficult it is to obtain stated preferences that conform to these normative conditions.

It is interesting (at least to us) that on the first question, economists have been more than willing to impose sometimes very stringent consistency conditions on respondents but at the same time have been reluctant to make any normative recommendations regarding the information respondents are required to have or the logic they are required to use. This strange position (at least to us) might in part be explained by economists' historical fixation on observable outcomes, and their disregard for subjective motivation and reasoning [Searle 1989, Elster 1993]. It is our contention that economists involved in preference elicitation studies need to consider reasons for actions as well as the actions themselves.

If some degree of information or logic is required over and above that which is used by the individual in real-life decision-making contexts, preferences of the suitable type cannot be obtained using telephone or postal surveys but can only be obtained using by more costly (but more cost-effective) deliberative methods. Conventional questionnaires may be able to get rid of biases and hence provide us with information about actual preferences. But if it is true preferences that we are after, only deliberative methods stand any chance of getting rid of the prejudices and soufflé that contaminate individual preferences for unfamiliar non-market goods such as health and health care.

Figure 1: A classification of the normative conditions for preferences

Condition	Level
Consistency	1. none 2. moderate 3. stringent
Information	1. actual 2. refined 3. "best"
Logic	1. actual 2. refined 3. "best"

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