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REVIEW ARTICLE

Using the Stated Preference Technique for Eliciting Valuations: The Role of the Payment Vehicle

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Abstract At the core of the stated preference method is choice of payment vehicle. Since payment vehicle is an intrinsic characteristic of a good, the choice of payment vehicle will naturally impact on the valuation of the good. Typical payment vehicles applied in the context of health are income tax levies, out-of-pocket payments at the point of consumption or private health insurance premiums. Where out-of-pocket payments will elicit use value only, private health insurance premiums will also disclose option value, i.e. the utility of knowing that one has access to a healthcare service should one need it. Income tax levies will disclose what in this paper is referred to as citizen's preferences, i.e. individual preferences that include use value, option value as well as (caring) externalities. This paper advocates that researchers design stated preference studies that encompass all relevant dimensions of value, and that serious thought is given to choice of payment vehicle. However, it is important to acknowledge that choice of payment vehicle has other potential implications for valuations. Payment vehicle and provider of services may be strongly linked in people's minds. If respondents implicitly associate a specific type of provider with a certain type of payment vehicle, it is important that any misperception is corrected by way of a precise description of the good being valued. Further, a pertinent issue is the extent to which respondents 'protest' to the stated preference question and how we should deal with these 'protesters'. No agreement currently exists about the procedure used to separate genuine zero values from protest values, nor about the treatment of protest responses in subsequent analyses. Beliefs are strongly associated with protesting, and exclusion of protest bids may therefore exclude individuals who have strong preferences for a payment vehicle. If it is acknowledged that payment vehicle is an intrinsic component of a good, exclusion of respondents who exhibit specific viewpoints may result in biased welfare estimates. Yet another issue is the presence of self-consciousness amongst respondents. If people derive utility from *saying* they are willing to pay for a public good (social desirability bias or warm glow), this potentially drives a wedge between people's stated value for a good in a survey and people's value for a good provided to them from the government. Tax payments are more binding than out-of-pocket payments. Payment towards public health programs via income tax may therefore generate lower consumer surplus than if the intervention was financed out-of-pocket with the option of opting out both in terms of participation as well as financially. Finally, only a few studies have looked at the impact of frequency of payments. The effect of temporal framing is clearly potentially important and at the same time an unavoidable component of the payment vehicle, yet it remains at present unexplored.

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Key Points for Decision Makers

- Stated preference methods as they are currently applied are often restricted to use value and do not include utility-generating factors such as option value and altruism.
- Payment vehicles can be out-of-pocket payment at point of consumption, increments in private insurance premiums or public insurance premiums, and choice of payment vehicle will determine whether option value and altruism are included in the valuations.
- Choice of payment vehicle will have other implications that may affect valuations. Payment vehicle may be associated with a specific type of provider, social desirability bias, and disutility associated with limitations in choice and may evoke different protesting patterns.
- Choice of payment vehicle should be influenced by whether the payment vehicle is reasonable in a specific case, i.e. how the case in question would be financed if it were implemented.

1 Introduction and Overview

The contingent valuation method (CVM) was initially developed in the USA, and has been increasingly used there since the late 1960s. Stated preference studies, such as the CVM, are applied to reveal (through benefit-cost analysis) whether the potential change in utility resulting from a change in the level of provision of a good is positive. The welfare implications are typically expressed in terms of the monetary amount, which would need to be taken from or given to the involved individuals to keep the individuals' overall level of utility constant. Stated preference methods have developed considerably since the 1960s, including an increased application of discrete choice experiments (DCEs), and the use of stated preference methods for valuing other types of goods such as transport, food and health.

At the core of the stated preference elicitation exercise is choice of payment vehicle. Because payment vehicle is an intrinsic characteristic of a good (a good always has to be paid for, either through prior subscription or at point of consumption), the choice of payment vehicle will naturally impact on the valuation of the good. Respondents' choices may depend on when payment is due and the way in which it is collected. Typical payment vehicles applied in the context of health are income tax levies, out-of-pocket payments at the time of consumption or private health insurance premiums. Where out-of-pocket payments at the point of consumption will elicit use value only, private health premiums will also disclose option value, i.e. the utility of knowing that one has access to a healthcare service should one need it. Income tax levies will disclose what in this paper is referred to as citizen's preferences, i.e. individual preferences that include use value, option value as well as possible (caring) externalities.

Fundamentally, the underlying reason for the rise of stated preference methods has been the acknowledgement that substantial portions of willingness to pay (WTP) were not reflected in the observed market prices of (in the first instance) environmental goods [1]. However, in health economics there has been surprisingly little focus on ensuring that the advantages of stated preference methods are fully exploited. Smith and Sach [2] report that, in the period 1985–2005, a total of 265 contingent valuation studies were conducted on health, of which 73 % focused on use value only, 13 % measured option value, 5 % externalities, and 9 % option value and externalities. The use of out-of-pocket payments in the majority of stated preference studies means that externalities, altruism and option value are more often than not excluded from valuations of healthcare services, even though it is highly acknowledged that (caring) externalities and uncertainty represent important market failures of the healthcare market and act as a motivation for market regulation and thus prioritisation discussions.

The choice of payment vehicle has other implications of which the analyst should be aware. First, payment vehicle and provider of services may be strongly linked in people's minds. If respondents implicitly associate a specific type of provider with a certain type of payment vehicle, it is important that results are not extrapolated beyond the relevant context, and that any misperceptions are corrected by way of a more precise description of the good being valued [3]. Second, a pertinent issue is how individuals react to the payment vehicle, the extent to which they 'protest', and how we should deal with these 'protesters'. No agreement exists about the procedure used to separate genuine zero values from protest values, nor about the treatment of protest responses in subsequent analyses [4]. How to identify and interpret protest responses is highly dependent on the payment vehicle applied in the stated preference survey. Third, self-consciousness may be present amongst respondents. If people derive utility from the act of *saying* they are willing to pay for a public good, this potentially drives a wedge between people's stated value for a good in a survey and people's value for a good provided to them from the government without the individual's direct involvement [5]. Fourth, payments towards public goods are most often mandatory [6]. Payments towards public health programs via income tax may therefore generate lower consumer surplus (due to negative process utility) than if the intervention was financed out-of-pocket with the

option of opting out, both in terms of participation as well as financially. This potential payment vehicle effect may therefore be wrongfully ignored if valuations are measured using out-of-pocket payment as vehicle, when the real-life vehicle is a levy on income tax. Finally, only a few studies have looked at the impact of frequency of payments. The effect of temporal framing is potentially important and at the same time an unavoidable component of the payment vehicle, yet it remains at present unexplored.

In the following, the aforementioned issues, which all relate to choice of payment vehicle in stated preference studies, will be discussed in turn, with the aim of introducing the reader to the specific problems and associated seminal reading. The aim of this paper is to highlight the importance of choosing the most appropriate payment vehicle in a given stated preference survey, and to formulate the WTP question (and subsequent follow-up questions) such that welfare measures are unbiased and relevant in the given policy context.

2 Sources of Utility beyond Use Value

2.1 Option Value

The term *total value*, synonymous with true WTP or willingness-to-accept (WTA), arose in environmental economics with the awareness that sometimes substantial portions of WTP or WTA were not accounted for in the measure of economic value obtained using market prices or revealed preference techniques [1]. The two most influential papers on passive use values [7, 8] devote considerable space to a discussion of motives for such passive values, and seek to provide exact definitions. Passive values are generally defined as existence value (the value of knowing something exists), bequest value (the value of leaving something behind for next generations) or option value (valuing the availability of a good should one need it sometime in the future). Where bequest and existence values are more relevant to environmental goods, option value is highly relevant in the context of valuation of health goods, as there is a high degree of uncertainty with respect to future need of healthcare services, which, for risk-averse individuals, generates an excess WTP beyond the expected value (risk premium or option value). Option value is most often categorized as a type of passive use value, as individuals are able to express WTP for insurance policies, which involve goods or services they have no prior experience with.

Irrespective of the exact distinction between use and passive use values, what is clear is that the value of ensuring access to healthcare services can only be measured if the payment vehicle has the format of an insurance question, where focus is not only on the value of present consumption of a healthcare service, but on the potential need for consumption of healthcare services in the future and the value associated with ensuring future access to such services. As most countries operate in a context where healthcare services are paid for via public or private insurance, it seems appropriate to include the option value associated with various healthcare services as the value of ensuring access to some healthcare services are likely to be associated with higher value than others. It may thus be argued that the most appropriate policy context is often one that is *ex ante*, and that the only source of relevant value includes option value.

One of the frequent attacks on passive use value is that it is motivated by 'moral satisfaction' or 'warm glow' [9]. However, this criticism is much less relevant in the context of health than in the environmental literature, as any impact of moral satisfaction on valuations can be eliminated if respondents are asked to value healthcare services from a private health insurance perspective.

2.2 Caring Externalities/Altruism

Self-interest is a standard assumption in the economic literature. However, it has long been accepted that other factors that do not stem from self-interest, such as altruism, may also factor in an individuals' utility function. Ashraf et al. [10] note that Adam Smith gave extensive treatment to sympathy in The Moral Sentiments from 1759. More recently, other influential writers [11, 12] have also pointed out that individuals are not purely self-interested. Whether altruism is a value component to be included in valuations has been discussed at length in the literature [13–16], the main issue being whether altruism is generated from selfish motives or whether it is steered by moral obligations. In the case of the latter, it is argued by some that altruism is not a legitimate source of utility. However, there is a basic problem in distinguishing between motivations that are founded on selfishness and those that are based on bounded rationality constrained by feelings of moral obligation and society's norms [13, 14]. Sen [15] addresses the complex discussion and writes: "… we must distinguish between two separate concepts: (1) sympathy and (2) commitment. The former corresponds to the case in which the concern for others directly affects one's own welfare. If the knowledge of torture of others makes you sick, it is a case of sympathy; if it does not make you feel personally worse off, but you think it is wrong and you are ready to do something to stop it, it is a case of commitment." Some researchers perceive altruism to be problematic if it is founded on notions of commitment, whereas others perceive that acting according to one's sense of commitment generates pleasure in its own right. Wiseman [16] takes a pragmatic stance to the discussion of whether altruism is a

selfishly motivated utility. He argues that notions of sympathy and a sense of moral obligation are not logically distinguishable, since community-motivated actions are, in some sense, made up of individual motivations. Hence, according to Wiseman, the inclusion of paternalistic altruism in valuations represents no contradiction to neoclassical economic theory.

Yet another controversy is whether altruism is 'pure' or 'paternalistic'. The purely altruistic externality exists when A's interest in B's health develops from a general concern of A for B's well-being. In other words, person A derives satisfaction from seeing B happy, irrespective of what makes B happy. Such altruistic concerns do not fit easily within the neoclassical model, as the selfish motivation is difficult to define because it is not linked to A's interest in specific consumption patterns of B. In two articles, Jones-Lee [17, 18] derives the valuation of a statistical life in the presence of different kinds of altruism and shows that one should take full account of people's WTP for the safety of others if, and only if, altruism is exclusively safety-focused in the sense that people care about the safety of others but ignore other dimensions of their welfare. If altruism is pure in the sense that people care about the level of welfare attained by others, one can simply ignore WTP for improvements in the safety of others. The intuition behind this result is that the pure altruist values both benefits and costs that accrue to others (the overall change in utility), and that these benefits and costs net out at an aggregate level if we are close to a social welfare optimum. However, how to deal with pure altruism has been discussed at length in the literature, and there is currently no sweeping conclusion; see Bergstrom [19] for a recent discussion. If altruism is paternalistic, the case of inclusion in valuations is straight forward, and hence a core question is whether *health-focused* altruism is paternalistic or pure. There is a small literature, which looks at this question. Jacobsson et al. [20] test if altruism is paternalistic with respect to health. In their study, subjects can donate money or nicotine patches to a smoking diabetes patient. When subjects can donate both nicotine patches and money, more than 90 % of the donations are given in kind rather than cash. These results are also confirmed in three additional experiments that vary the framing, using food stamps instead of money, and using exercise instead of nicotine patches. Breman [21] investigates whether donors are paternalistically altruistic when contributing to foreign aid. In a double-blind experiment, subjects chose whether to make a monetary or a tied transfer (mosquito nets) to an anonymous household in Zambia. The study shows that paternalistic donors constitute 65 % of the total sample, whereas purely altruistic donors constitute 15 %. The authors conclude that health-focused paternalism dominates the foreign-aid giving of individuals in the context of health. The conclusions from these studies confirm the intuition by Arrow [22] that "The taste for improving the health of others appears to be stronger than for improving other aspects of their welfare."

The overall conclusion of this section is that option value and altruism (also termed 'caring externality') are potentially relevant utility components in an economic evaluation. However, in order to capture these sources of value it is important that the analyst phrases the WTP question not in terms of what the respondent is willing to pay out-of-pocket at the time of consumption, but what s(he) is willing to pay extra in private or public insurance premiums. The analyst has a choice of framing the question from an ex post perspective where only use value is measured, or from an ex ante perspective, which also allows for measurement of option value. Alternatively, an ex ante citizen perspective may be applied where the healthcare service is then presented as a public good and both use value, option value and externalities (including altruism) may be incorporated in the total valuation of a good. For an overview of these perspectives, see Dolan et al [23]. However, it is important to note that a distinction must be made between the citizen and the impartial spectator perspective. In much of the literature, both types of preferences are labelled citizen's preferences, which generates a somewhat confused discussion. In the impartial spectator perspective, the respondent is asked to ignore any self-interest, and is explicitly asked to plug into his/her 'ethical preferences' [24]. In the literature, there are suggestions of a number of ways in which impartiality in theory can be ensured. Rawls [25] presents the concept of 'veil of ignorance', Fishkin [26] suggests deliberative polling, whereas the concept of the ideal observer theory is closely associated with Adam Smith [10]. The impartial spectator perspective may elicit preferences for fairness and may advise on the shape of the societal welfare function, something that cannot be done within the neoclassical paradigm [27]. However, standard CVMs that operate within this standard paradigm do not align with assumptions of veil of ignorance, or processes of deliberative polling, but seek to plug into individuals' utility functions where utility is perceived as being generated on the basis of selfish interests. Citizens' preferences reflect such selfish interests, but may encompass selfishly motivated altruism. We now turn to other issues that relate to the framing of the WTP question.

3 Other Issues Relating to the Framing of the WTP Question

According to economic theory, a selfish individual should have the same WTP for public and private risk reductions, given equal risk reductions. A pure altruist, on the other hand, should have a higher (lower) WTP for a public than a

private risk reduction if the individual expects the utility of other individuals to increase (decrease). Thus, only when a pure altruist expects the utilities of others to decrease do we expect that private WTP > public WTP. A safety-focused altruist should consistently have a higher WTP for a public risk reduction.

There is currently a small empirical literature conducting tests on the relative valuations of goods or services that ideally only differ with respect to them being public or private goods (where a public good is defined as a good that is freely accessible to all citizens and non-rival and non-excludable). The motivation for these studies has been to measure the value of altruism, assuming that any difference in valuations across public and private goods must be generated by a feeling of sympathy or a concern for equity in access. In a meta-analysis of 74 stated preference studies on road safety [28] it was found that the value of a statistical life derived from private WTP is around 80 % higher than the value of a statistical life derived from public WTP. More recent studies [3, 29, 30] have also found private valuations of risk reductions in traffic to be higher when framed as a private rather than a public good. Clearly, these WTP patterns do not accord with expectations, and do not reflect any positive net impact of altruism on valuations. In contrast Arana and Leon [31] conducted a similar study in the context of the healthcare sector, and demonstrated that valuations were higher in the public setting. Pedersen et al. [32] likewise found that provision of services by public providers and financed by taxes incurred a higher valuation of prostate cancer screening programs than if they were privately provided and financed. The current literature on the subject of the relative valuation of public and private goods thus emphasizes the need to better understand the underlying motivations of these preferences, as they indicate that relative valuations may be highly context specific, and that selfishness versus altruism is not the only factor that determines a difference in valuations across excludable and non-excludable goods. In the following, we discuss various payment vehicle effects and biases of which the analyst should be aware.

3.1 Attitudes to Provider of Services

Shogren [33] argued that the reason for valuations being higher in some cases when a private payment vehicle is applied as opposed to a public payment vehicle (such as increases in taxes) may be that respondents perceive public provision of safety as inefficient. When valuing public and private goods, respondents are generally not valuing goods per se, but also attitudes to payment vehicles as well as attitudes to providers. That attitudes to providers play a role was recently confirmed by Svensson and Johansson [3]. Their results imply that the value of a private risk reduction in the context of traffic safety is three times higher than that of a public risk reduction, and that a significant part of the difference can be explained by respondents' attitudes towards private and public provision of goods in general. Interestingly, there is no indication that the same attitudes persist across all sectors, since several studies [31, 32] demonstrate that the public payment vehicle produces higher valuations in the context of healthcare services. Also, attitudes to private and public provision may be very country specific. In principle, there is nothing wrong with such attitudes impacting on valuations if the respondents' perception of who is to provide the service reflects the true scenario. However, the attitudes to private versus public provision of services may confound valuation of programs, and potentially lead to bias if the assumption regarding the source of provision is wrong. For example, publically financed services are (in some countries) more and more frequently provided by private institutions, but respondents may not realize this and automatically associate public financing with public provision.

There are several potential explanations for the finding that WTP is higher for the private good, most of which are not directly associated with public versus private goods per se, but with factors that are associated with the delivery of these types of goods: provision of the good and method of payment. Whether one can distinguish between the good and the mode of delivery is questionable. Payment is closely linked to the possibility of excluding people from access to a service, making it difficult to distinguish between attitudes to payment vehicle and altruism/selfishness. Likewise, although goods financed through taxes can be provided by a private organization, the responsibility for the quality of the delivery will lie with the public authorities. Therefore, when valuing public and private goods, we are generally not valuing goods per se, but also attitudes to payment vehicles as well as attitudes to provider. We are in fact measuring the welfare implications of policy options, i.e. a far more complex package.

3.2 Protesting

Intrinsic to the issue of payment vehicle is the question of how to deal with protest responses, and the implications of such dealings. Protest responses are zero bids that may be judged as reflecting principles/attitudes to the payment vehicle or factors closely related to the payment vehicle, and not valuations of the good in question. As stated by Meyerhoff and Liebe [4], no agreement exists about the procedure used to separate genuine zero values from protest values, nor about the treatment of protest responses in subsequent analyses. The possibility that protest responses and their meaning may vary according to the type of good being valued is seldom acknowledged [34]. Meyerhoff and

Liebe [4] conclude that protest beliefs have a significant effect on the decision to pay as well as on the amount of money stated by those who are WTP, and that exclusion of protesters may inconsistently exclude beliefs that are important for the preferences that are elicited. Further, Halstead et al. [35] argue that the removal of protest bids can only be sustained if the characteristics of protest bidders do not differ from those of respondents whose bids are accepted as legitimate. If, for example, protesters have strong views on access issues due to paternalistic altruism, exclusion of such individuals is nonsensical if one is seeking to estimate the relative valuations of public and private goods. Clearly, protest bids should not be excluded if one is seeking to establish the true value of a policy option [35, 36]. Moreover, if other preference patterns (such as attitudes to the good in question) correlate with attitudes towards the payment vehicle, a routine exclusion of protest bidders may results in biased WTP estimates. The evidence [4, 34–36] suggests that more care should be taken in dealing with so-called protest responses, with focus on analyzing whether protest responders are representative of the sample of the whole, or whether they systematically differ on other viewpoints. If systematic differences are observed, this may mean that exclusion of protest bidders will result in wrong valuations of the policy option and perhaps even of the good per se beyond the contextual factors.

3.3 Social Desirability Bias

Contributions to a public good may be driven by two forces. Individuals may value the provision of the public good due to its use value, option value and/or altruism. Individuals may also value the contribution per se because it makes them feel good. They are in effect purchasing 'moral satisfaction' or 'warm glow'. This latter motivation is defined by Andreoni [37] as "impure altruism." As Spash [38] describes, if an individual gains moral satisfaction from giving to a good cause, then that individual may in turn be more likely to have a positive intention to pay. However, this positive intention to pay may be largely independent of what happens to the money afterwards. Johansson-Stenman and Martinsson [39] argue that people are motivated by concerns about self-image and status and that people engage in a form of self-deception regarding these concerns.

Although the issue of 'warm glow' has been most prominent in the environmental economics literature, it is very much related to the general debate of commitment and morals constraining consumer choice, and thus potentially impairing welfare measurements. To the extent that one perceives warm glow to be a significant problem when eliciting citizens' preferences in the context of health, Lusk and Norwood [5] suggest a method to strip valuations of self-consciousness in order to avoid what they term social desirability bias and/or hypothetical bias. The authors argue that some of these biases result because people derive utility from the act of *saying* they are willing to pay for a good. To counteract this phenomenon, they suggest an approach that asks people to predict or infer others' values for a good instead of asking people to state their own value. There is a growing literature, primarily in psychology, that studies how people predict what others will do. Epley and Dunning [40] found that people's predictions of others were a significantly more accurate predictor of actual future behaviour than people's own statements about themselves. This is in line with a broader literature suggesting that while people accurately recognize biases in others' behavior and survey responses, they are unable to recognize their own susceptibility to such biases [41]. Lusk and Norwood [5] label their approach "an inferred valuation task" and suggest that such a task can be implemented by asking people to predict the fraction of individual that would vote affirmatively in a referendum setting at various levels of price. For example, in a discrete choice scenario, one could ask respondents not to indicate their own choice, but to indicate which alternative they believe a majority of others would vote for.

3.4 Compulsory Versus Non-Compulsory Payment

One implication of applying a payment vehicle such as a tax levy rather than an out-of-pocket payment is that tax payments are generally more binding. Once a publically financed service is created, the flow of money to such a service cannot be stopped at the discretion of the individual, even if use of the service is voluntary. Hence, an important characteristic of the payment vehicle is that a tax levy is more binding than an out-of-pocket payment, thereby restricting consumers' ability to readily substitute particular goods or services.

A thorough discussion about strategic behaviour in stated preference studies is found in Mitchell and Carson [42]. When public goods are valued, compulsory payments are required in order to ensure that the respondents see the survey as consequential . What is not readily acknowledged in this literature is the utility associated with the process of paying itself, which may also have implications for WTP.

When taking a utilitarian approach, this is referred to as 'process utility' and has been explored in various contexts in the health economics literature [43]. Personal choice is seen as an important source of process utility. Sen [44] argues that it is possible to attach importance (and thus value) to having opportunities, even if they are not taken up. So, to the extent that real-life payments will be compulsory, and there is no possibility of opting out, it is not appropriate to use a payment vehicle that is not binding,

simply because it may generate a different level of program utility. A recent review concluded that the loss of consumer choice has largely been ignored in published economic evaluations of mandatory health programs [45].

Another facet of payments being compulsory is that a pure altruist's *total* WTP for a project can exceed or fall short of his WTP for a change in his own safety, depending on whether he believes that his own WTP falls short of or exceeds the WTP of others. As Johannesson et al. [46] explain, if we assume that a respondent is willing to pay $\$x$ for an increase in his own safety, his total WTP for a uniform public risk reduction of the same magnitude may fall short of $\$x$ if he believes that others are willing to pay less than $\$x$, but will still be forced to pay that amount $\$x$ for the project. This is because those other individuals, for whom he cares, will then experience a lower utility if the program is implemented. In turn, this decrease in the utility of others reduces the pure altruist's WTP for the public safety project. According to Johannesson et al. [46], this implication of pure altruism is overlooked in the literature. The authors suggest that there are ways around this problem. For example, one strategy would be to state that all other individuals are asked to pay an amount corresponding to exactly the value they themselves attach to a service. In this way, other individuals' utility would remain unaffected by the respondent's WTP, and pure altruism would be excluded from the valuation.

3.5 Frequency of Payments

A recent advertisement for an Australian insurance company read "Our monthly insurance payment option will ease the burden that an annual premium can bring. You can spread your annual insurance bill across twelve easy to manage monthly payments. A fee of 15 % of the premium applies if you choose to pay by the month." The insurance company clearly believes that consumers have a preference for paying more frequently and even to an extent that they would be willing to pay more in total to have this opportunity. If such preferences are prevalent, it has implications for the validity of CVM. However, the impact of frequency of payments on valuations in stated preference studies does not seem to have been explicitly acknowledged nor thoroughly dealt with. Contingent valuations often ask individuals to state their WTP in terms of WTP per year [47–49] but also frequently in terms of WTP per month [50–53]. Whereas range and centering bias associated with the use of payment cards have been subject to study [54, 55], only a few studies have looked at the impact of frequency of payments. Johannesson et al. [56] compared two independently conducted studies, which mainly differed with respect to whether respondents were asked to state their WTP per month or per year. The authors found that monthly payments increased the annual maximum WTP by 50 %. Hammitt and Haninger [57] asked respondents about WTP to reduce risk of food-borne illness where payment was framed in terms of either per meal or per month. They found the estimated value of risk reduction not to be sensitive to the time framing. Andersson et al. [58] compared WTP per unit risk reduction for car safety when risk reduction (i.e. probabilities) and payment were framed either monthly or yearly. They found WTP per unit risk reduction to be sensitive to time framing, with the annual scenario producing WTP estimates that were 70 % larger than in the monthly scenario, suggesting that the results are driven by sensitivity to the framing of the risk reduction more than sensitivity to the frequency of payment. Gyrd-Hansen et al. [59] on the other hand, found that WTP increased by around 100 % when open-ended WTP was elicited in the form of monthly installments rather than annual payments. Thus, it seems that the potentially huge impact of frequency on overall WTP represents an Achilles' heel in stated preference valuations, as there is in principle no correct framing. More research is needed to ascertain the extent of the problem, and to understand the underlying reasoning of respondents. In the meantime, researchers should perhaps state payments in terms of both monthly and annual instalments to eliminate any variation in valuations across studies caused by this dimension of the payment vehicle.

4 Discussion

Smith [60] has suggested that a default assumption should be that all elements of value are of importance in stated preference studies. This appeal should be taken seriously by (health) economists. Important elements of value in the context of health must necessarily be option value and caring externalities. This is very evident by the observation that the majority of citizens in the Western world have either private or public health insurance, and the fact that most countries are preoccupied with obtaining some degree of equity in health or equity in access to health. In which case, it seems very appropriate to use an evaluation tool that includes citizens' preferences for knowing that they and others have access to specific healthcare services in the future. Moreover, a point that has been raised in this paper is that altruism in the context of health is likely to be paternalistic (and not pure) and motivated primarily by sympathy if citizens care about other people's health out of genuine concern for others and not merely obligation. On these grounds, this paper encourages the researcher to apply stated preference methods with the aim of encompassing all relevant elements in the respondent's utility function. This will, in many cases, involve introducing

payment vehicles other than out-of-pocket expenditure at the point of consumption.

Hence, at the core of stated preferences lies an appropriate choice of payment vehicle. Researchers should, as a rule of thumb, follow the advice given by Cummings et al. [61] and choose the payment vehicle that is reasonable in a specific case, which is the payment vehicle one expects will be applied in real life if the service were to be implemented.

However, in designing stated preference studies, the researcher should not be ignorant of other potential implications associated with choice of payment vehicle. In this paper, the most important types of payment vehicle effects have been listed. These include awareness of the process utility generated by the mode of payment, including the disutility associated with tax payment being more binding, as well as more indirect associations such as the potential link between payment mode and type of provider. If respondents have preferences for private versus public providers, this may affect the valuation of the good. This is perfectly legitimate and such preferences should be included in valuations, but the researcher needs to make sure that the respondent is not expressing valuations based on a misconception. This paper also touched upon the issue of dealing with protest bidding. If people have strong preferences for a payment vehicle or for good characteristics linked to the payment vehicle, the exclusion of protest responses may produce biased valuation. Further, the introduction of a citizens' perspective involves compulsory payments towards a common pool of funds. However, this type of payment vehicle may generate some specific issues with which the researcher needs to deal. One issue is the potential presence of social desirability bias, another is the respondent's reluctance to express payments if s(he) is does not want to force others to pay. This paper has presented some ideas for solving these issues.

5 Conclusion

An important message that this paper seeks to deliver is that a valuation of a good per se cannot be identified due to the very existence of a payment vehicle. Therefore, the researcher must acknowledge that applying stated preference methods necessarily involves valuation of a health program inclusive of payment vehicle. This paper is meant to provide the reader with an overview of the most important issues relating to choice of payment vehicle, and to promote more creativity in the conduct of stated preference studies in relation to healthcare.

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