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How Much Relevance Does Reality Imply? (Re)Considering the Endowment Effect

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Abstract

A leading approach to understanding significant discrepancies between observed willingness to pay (WTP) and willingness to accept (WTA) in policy evaluation is the "endowment effect"—that preferences are based on a reference point or anchor that leads WTA to exceed WTP. Unlike assertions that consumers make biased choices not reflecting their underlying welfare, the endowment effect possibility is consistent with neoclassical economics. Examples where endowments matter suggest they are not malleable. WTA can exceed WTP if endowments differ across contexts. "Loss aversion" interpretations do not apply, as those concern the utility of money, not willingness to give up one good for another. Kinked indifference curves can increase WTA over WTP, but calling the quantity at the kink an "endowment" adds nothing to the concept. A likely interpretation of the endowment effect is normative: WTA should be relevant to policy evaluations where consumers should have something they currently do not.

Key Words: endowment effect, willingness to accept, willingness to pay, policy evaluation, loss aversion

JEL Classification Numbers: D61, D03, B41, Q51

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1. Introduction and Summary

The endowment effect, that someone's willingness to pay (WTP) for a gain or willingness to accept (WTA) a loss depends on whether that person treats a good as something she already has, merits recognition in policy evaluation. The endowment effect is often combined with assumptions of irrationality or biases under the "behavioral economics" heading. However, the endowment effect is consistent with conventional economics, in that utility functions including a "reference point" or "anchoring" parameter based on a perceived endowment satisfy standard neoclassical axioms and assumptions. Moreover, social practices designed to influence endowments suggest validity to the notion that perceived endowments matter.

Consequently, endowment effects should not be regarded as anomalies invalidating the standard economic tools used to evaluate public policies. What remains is to clarify what, if any, implication the reality of an endowment effect has for policy evaluation. Because the endowment effect is consistent with neoclassical utility functions, it is not obvious how it adds to our understanding of how to solve the puzzle of observed WTP/WTA differences substantially exceeding those that standard economics would predict (Horowitz and McConnell 2003; Knetsch et al. 2012). Specifying the endowment effect by saying that one's willingness to pay for X depends on whether it is part of one's endowment can provide an example of how WTA can significantly exceed WTP, to the extent that X is part of the endowment in the WTA inquiry but not part of the endowment in the WTP inquiry. However, holding the presence of X in the endowment fixed, there is no more reason to infer a substantial difference between WTP and WTA.

This leads us to consider whether more specific assertions of the endowment effect present valid explanations of a WTA/WTP difference. One is that rephrasing a question from WTP to WTA changes the endowment, thereby altering the utility function. Persuasive examples of

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settings in which endowments can change willingness to pay—such that people pay more for something when they believe it to be part of their endowment than when they do not—suggest that endowments are not easily changed.

A second possibility is to bring in the "loss aversion" idea often associated with the endowment effect (Thaler 1980; Kahneman et al. 1991) and in "prospect theory" (Kahneman and Tversky 1979). After clarifying the distinction between "loss aversion" and "risk aversion," we note that loss aversion is empirically dubious, at least outside laboratory settings. Of more relevance is that loss aversion and prospect theory interpretations of the endowment effect concern the marginal utility of money, whereas discrepancies between WTP and WTA concern a person's interest in substituting more of one good for less of another.

A more appealing possibility consistent with rates of substitution is the idea that indifferences curves are kinked at the endowment level. As Knetsch and Mahasuweerachai (2015) point out, a kink in the indifference curve means that people will be willing to give up more for loss of a good below the endowment level than they would be willing to give up to obtain more than the endowment level. The notion that a kink or discontinuity in marginal rates of substitution could produce discrepancies between WTA and WTP is not novel (Hanemann 1991; Shogren et al. 1994) and does not specifically depend on the endowment effect. Labeling the location of the kink with the term "endowment" adds little, if anything, to the analysis.

All that said, reality of an endowment effect requires taking seriously the issue of what is being asked of winners and losers when a change in policy is being considered. If endowments are based on experience and thus prepolicy allocations, benefit-cost analysis should be based on winners' WTP and losers' WTA, creating a status quo bias for policy, just as in behavior. A more consequential view is normative—that the cost society should bear to provide a benefit should be based on WTA *as if* persons should have that policy benefit, and thus treat it as part of their endowment. A higher WTA with *B* in the endowment that exceeds WTP without *B* in the endowment thus becomes the revealed preference that matters.

The remainder of this paper elaborates on these ideas. Section 2 posits an initial definition of the endowment effect and its consistency with neoclassical utility. To help make this case, it presents two leading, plausible examples on opposite sides of the "consumption" spectrum—advertising and Buddhism. Section 3 briefly discusses the possibility that, counter to these examples, people can be easily persuaded, simply by framing a question, to change their endowments. A personal example illustrates other potential explanations for WTA's exceeding WTP that do not involve endowments. Section 4 offers a more formal definition of the endow-

ment effect in terms of how changing the endowment changes WTP. This shows how WTA could exceed WTP, but only because the endowment itself changes as the question changes. Section 5 provides needed clarification of the "loss aversion" characterization of the income effect, with a look at its empirical plausibility and its relevance (or lack thereof) to the WTA vs. WTP question. Section 6 provides a short exploration of Knetsch and Mahasuweerachai's (2015) "kink" argument.

Section 7 suggests interpreting large and consequential differences between WTA and WTP as statements not about what people's endowments actually are, but about how they would answer those questions if the good at issue was or was not part of their endowment. This suggests an ethical rather than methodological interpretation of the choice between WTA and WTP, based on whether this good should be (or should have been) part of a person's endowment. Section 8 concludes with a cautionary note.

2. Opening the Neoclassical Door: Examples

The endowment effect is within the bounds of neoclassical economics. Endowment effects concern the possibility that how much an economic agent is willing to pay for N units of X depends on whether N units of X are in something the agent perceives as an "endowment." If that endowment is fixed—I discuss below suggestions that it might not be—the resulting preference ordering, or utility function, can be consistent with neoclassical utility functions. I also discuss below assertions regarding the meaning, relevance, and plausibility of "loss aversion" characterizations that an agent is risk-preferring if he has less than an "endowment" amount of overall wealth and not just a particular good or amount of a good such as health care or environmental quality, either in general or specifically (e.g., a pristine Grand Canyon).

Most important is that the endowment effect does not provide any reason to doubt that revealed preferences are actual preferences. "Behavioral economics also concerns cognitive biases or shortcomings that lead an agent's actual choices to differ from choices in his best interest. These differences matter because they break the link between choices and benefits that justify deferring to markets as mechanisms leading to efficient outcomes absent a procedural failure (insufficient competition, significant externalities, asymmetric information). When there is such a failure, breaking this link means that evaluation tools based on calculating "as if there were a market" outcomes—benefit-cost analysis, specifically—no longer can be employed. If data on revealed willingness to pay no longer reliably indicate actual willingness to pay, policy options requiring substitution of a policymaker's judgment for individual choice are apparently required (Brennan 2014).

Endowment effects do not present this difficulty. Beyond axioms of transitivity, monotonicity, and completeness, and minimal assumptions of convenience regarding convexity of indifference surfaces, standard economics places no restrictions on utility functions. Moreover, they do not contradict any neoclassical theory regarding the origin or nature of preferences. Economics treats preferences as data and thus has no theory of their origin. In addition, standard economics lacks theory of preference change as well as origin. Economics does require some stability of preferences to be able to make empirical predictions based on past behavior, but where any such changes come from is outside the domain of the paradigm. Accordingly, nothing in neoclassical theory precludes the existence of special endowments relevant to willingness to pay or says that preferences could not develop, evolve, or change in ways that indicate a potential role for and change in endowments.

To establish that endowment effects merit attention because of the insights they can provide into policy evaluation, they should be more than theoretical possibilities. They should provide insights into real-world phenomena as well. Two examples are available. They are, notably, on different sides of the spectrum regarding the encouragement of consumption.

2.1. Advertising

Economics has offered a number of potential reasons why advertising might influence demand. A firm can advertise to provide information that gives consumers a reason to believe that the firm's product would be better aligned with consumers' preferences, thus increasing their demand for the product. At its most basic level, advertising can let consumers know that the product exists in the first place, reducing costs of search and uncertainty. A more economically sophisticated argument is that advertising can mitigate asymmetric information if it can provide a signal of high quality; the most influential example in economics being that unless consumer satisfaction from initial purchases induces repeat business, the advertising will not have been profitable (Nelson 1974).

The endowment effect provides a different and interesting rationale for advertising. Suppose that a potential vacationer has full information about a taking a cruise, but her willingness to pay for the cruise is less than the price. Suppose further that the cruise line advertises the cruise, not to provide additional information directly or to overcome an asymmetric information problem, but to convince that traveler that a cruise is part of her endowment. For example, an advertising campaign around the theme that "everyone deserves a cruise once in her life" could persuade her or other vacationers to consider that she is missing something from her endowment, rather than merely buying something new. This could increase willingness to pay for the cruise.

Although I have no particular expertise in marketing other than a lifetime of watching TV commercials, the notion that advertising to change endowments to include the advertised product has some intuitive plausibility.

2.2. Buddhism

At the other end of the consumption spectrum is Buddhism. By this, I do not mean anything that might be construed as religious. I refer to the aspiration in the practice as characterized by the Four Noble Truths, in particular the second and fourth. The second is that the cause of unhappiness is wanting that which one does not have. The fourth is that the way to eliminate unhappiness is to rid oneself of that wanting. Buddhist practice, meditation, and following the Eightfold Path are methods to work toward eliminating wanting that which one does not have and clinging to what one does have.

This is obviously not the place to consider the empirical and theoretical merits of Buddhist practice, and I am far from sufficiently expert to thoughtfully engage in that discussion. The basics of the practice, however, dovetail nicely into the endowment effect. One could characterize Buddhist practice as saying that one should get as much as possible out of one's endowment. In economic terms, this would reduce willingness to pay and eliminate the increase in willingness to pay that comes about because one believes that something one does not have should be in one's endowment. In this sense, Buddhist practice is the opposite of advertising: the former is about shrinking endowments to reduce wanting, and the other is about increasing endowments to increase wanting.

One puzzle in representing Buddhist practice in willingness-to-pay terms is that if everything is taken out of an endowment, the willingness to give up one thing for another—marginal rates of substitution—would not change, with no observed effects on willingness to pay. To reconcile these concepts, one needs to hold something outside the set of things one is trying to get out of one's endowment through the practice. That thing outside the practice could be one's time and attention. An important component of the practice is cultivating the ability to focus on experience in the immediate present—being "in the moment" in common parlance. In our jargon, the idea would be that Buddhist practice reduces the marginal willingness to give up living in the moment for satisfying longings for goods and services ("living in the material world").

3. Malleability

In different directions but similar ways, advertising and Buddhist practice underscore the presence and relevance of an endowment effect. Both, however, also underscore the difficulty in changing what one regards as one's endowment. Advertising may well succeed in getting many of us to include in one's endowment a particular set of goods and services. But the amount spent on advertising suggests that such efforts are hardly trivial. Estimates of advertising expenditure in the United States for 2015 run to $187 billion, a little more than 1 percent of gross domestic product (Lunden 2015).

Buddhist practice suggests that reversing the process may be more difficult. Practitioners view reducing wanting—willingness to pay, if you will—as a lifelong discipline, rather than something one can achieve instantly. The image of the Buddhist monk leading an ascetic life in a monastery provides an illustration that the path to this particular conception of enlightenment is not easy.

Those illustrations suggest that the endowments are not easily malleable. One should recognize that some new products can become part of one's endowment in seemingly a short time. Automobiles and electricity are older examples, television and air-conditioning more recent, and smartphones and high-speed Internet access current instances. However, even these preference changes took years.

In particular, these all indicate that changes in what is regarded as an endowment take much longer than experimental results used to posit an income effect. Examples include classroom experiments in which coffee cups or tokens are randomly distributed rather than being exchanged so that they end up in the hands of those who value them the most (Kahneman et al. 1990). In light of the apparent difficulty in changing endowments as indicated by the above examples, a more plausible explanation would be transactions costs: for example, students may not be particularly willing to reveal to fellow students sitting around a seminar table their demand for a university coffee mug that they can buy in the campus bookstore if they so choose.[1]

Another assertion relevant to policy analysis is that the mere framing of a value question in terms of willingness to pay to get something or willingness to accept compensation for losing

[1] Plott and Zeiler (2011) critique this experimental design. *Loomes* et al. (1991) provide an experimental examination of regret as a kind of endowment effect that could explain intransitivity of choices in experimental settings.

that thing itself changes whether that thing is or is not in one's endowment. That is not to deny the existence of different responses. But how endowment effects figure into that difference is not likely to be as simple as a malleable response. Moreover, if preferences are that malleable, those leaning against policies to provide goods to more people should just encourage people to drop those policy benefits from their endowments and to get taxpayers who pay for those benefits to include in their endowments the goods they would buy with lower taxes.[2]

It may also be worth noting that if people's reference points are the state of affairs prior to a policy change, those who would lose under the policy would get the value of their losses treated in WTA terms, while those who get the benefits would have those valued in WTP terms. Were such policy to be reversed, those who got the benefit would now value its loss in WTA terms, while those who had lost and got those losses recovered would value them in WTA terms, if endowments were sufficiently malleable. If WTA is systematically larger than WTP, and endowments are malleable, this will induce a "status quo bias" into policy decisions, just as it arguably does in personal choices (Kahneman et al. 1991; Masatlioglu and Ok 2014).

4. Formal Definition: Relevance to the WTA/WTP Difference

An endowment effect is plausible; less so is assuming it is sufficiently malleable to explain significant differences between WTA and WTP. If the endowment effect is not malleable, then in any situation the utility function defined parametrically by an endowment is itself stable, and as such it retains the property that differences between WTP and WTA should be slight.[3]

This does not mean that these differences are illusory. To invoke a personal example, I own a 50-year-old electric guitar that I could sell for more than I would be willing to pay for it, but I do not.[4] I have revealed that my willingness to accept the loss of that guitar must exceed my

[2] One might argue that in the United States, the latter preference change has worked all too well.

[3] To a linear approximation, the difference between WTP to avoid a price increase for something and the WTA a price increase, relative to spending on this good, will be the percentage change in price squared, times the income elasticity of demand, times the share of income spent on this good. This relationship is based on the difference between consumer surplus as accurately measured under compensated demand curves and consumer surplus as measured under actual demand curves (Willig 1976). This approximation becomes less accurate for choices where the option is whether a good is available or not—that is, where the change in price is not small but is large enough to choke demand.

[4] Thaler (1980) initially defined the endowment effect as this sort of behavior.

willingness to pay for it.[5] The reason my WTA exceeds my WTP is not because I am within some 5 percent margin between the two that perhaps would be explicable with a textbook preference ordering, or because I have an extraordinarily high income elasticity of demand for guitars, or because I spend a huge fraction of my income on them.[6] The apparent irrationality compels me, as an economist, to seek out an explanation.[7] Three related possibilities are real options theory, a hysteresis effect that makes something more valuable once owned, and transaction costs—that if I sold that guitar and decided later I wanted one like it, I might have a hard time finding one, making the sale effectively irreversible.

Understanding what an endowment effect might contribute to the difference requires a more formal definition.[8] Let WTP(a; b) be the willingness to pay for a units of a good with b units of that good as the endowment effect, or the anchoring parameter. The endowment effect is that b matters. To specify what it means for the endowment to matter, introduce the following notation. Supposed that if x and y are quantities of a particular good, $y > x$, and z is the endowment. Define the following expression:

$$\text{WTP}(x \to y; z) = \text{WTP}(y; z) - \text{WTP}(x; z).$$

There exists an endowment effect if

$$\text{WTP}(x \to y; y) > \text{WTP}(x \to y; x). \quad (1)$$

One would pay more to go from x to y if y is part of one's endowment than if the endowment is only x.

This definition captures the idea that endowments matter in that one is willing to pay more to get up to the quantity perceived as part of one's endowment than if they do not. Perhaps

[5] The market for "vintage" brand-name electric guitars is highly liquid and many older models can be worth 100 to 1000 times as much, after inflation, as they were when brand new. The guitar I have in mind is not in that extreme category.

[6] This behavior defines "endowment effect" in Thaler (1980).

[7] While it is outside the scope of this paper, I offer as a methodological principle the idea that a bias or irrationality belongs with behavioral economics or psychology until it is explained to the actor. If the actor persists in doing it, then it falls within the domain of economics to come up with an explanation.

[8] This is not as formal a definition as one might include, since it does not include all it might take to define a complete preference ordering to remain the same "all else equal." But for the endowment effect, for example, holding all marginal rates of substitution constant that do not involve trade-offs between a good within the endowment and outside the endowment.

ironically in light of the discussion, however, the endowment matters more if there is not a generic difference between WTP and WTA. Write the WTA to accept a loss from y to x given anchor/endowment z as $\text{WTA}(y \rightarrow x; z)$. Then, following the usual neoclassical pattern, suppose that regardless of the endowment, the utility function looks neoclassical: that is, WTA ≈ WTP. In our notation,

$$\text{WTA}(y \rightarrow x; z) \approx \text{WTP}(x \rightarrow y; z). \quad (2)$$

If there is an endowment effect, the WTA will presumably depend on the endowment as well. Specifically, relationships (1) and (2) imply

$$\text{WTA}(y \rightarrow x; y) \approx \text{WTP}(x \rightarrow y; y) > \text{WTP}(x \rightarrow y; x). \quad (3)$$

The endowment effect itself can explain a difference between WTA and WTP if the endowment is different across those settings. This is consistent with WTA ≈ WTP holding endowments constant. If in fact one believes that WTA > WTP because of some kind of irrationality or some other effect, such as a lack of substitutes for the good if lost, the endowment part of the story ceases to matter.

Because the endowment effect is consistent with neoclassical utility functions, viewed narrowly it does not add to our understanding of WTP/WTA differences unless endowments change across contexts. If changing one's anchor, reference point, or endowment requires multiple exposures to advertising or years of meditative discipline, what may be going on? A possibility is that, perhaps because of heuristics grounded in exposure to how questions are framed, differences in responses to WTP vs. WTA could be based on interpreting the questions in "as if endowment" terms. Respondents may perceive a "WTP for X" question as asking for an answer *as if X is not* in one's endowment, and a "WTA losing X" question as asking for an answer *as if X is* in one's endowment.[9] If so, WTP and WTA involve asking different questions, not reframing the same question, and thus different responses are consistent with (economic) rationality. If phrasing the valuation of a benefit in terms of WTA gets people to state a dollar amount based on either consciously imputing that benefit as part of their endowment or subconsciously employing a

[9] A second possibility is that ordinary people, not being economists, answer the question "What are you willing to pay for X?" with "The least possible that I'd have to pay." They attempt to guess the market price rather than state their reservation price. When asked about willingness to accept the loss of something, they may then respond with their reservation price. The difference between WTA and WTP would just be consumer surplus. For indivisible goods where the quantity one has is not variable at the margin, this consumer surplus may be substantial.

heuristic response to the WTA question placing B as part of their endowment, then one would expect higher dollar responses to WTA questions.

We return to this below, after looking at whether the "loss aversion" concept often associated with the endowment effect is helpful in understanding the WTA/WTP difference. Interpreting these interpretations, so to speak, as normative statements about what should or should not be in one's endowment may be the key to how benefit-cost analysts and policymakers should interpret these differences.

5. Is "Loss Aversion" an Answer?

One idea associated with the endowment effect is "loss aversion," itself often shorthand for the "prospect theory" of choice under uncertainty formulated by Kahneman and Tversky (1979). Like the endowment effect, prospect theory and loss aversion depend on a reference level of wealth. For levels of wealth below the reference point, the marginal utility of wealth is increasing, while for levels of wealth above that reference point, the marginal utility of wealth is declining. In laboratory experiments, this difference appears as risk-preferring behavior for choices involving wealth levels below the reference, and risk aversion for wealth levels above the reference point.

Loss aversion is often misunderstood, insofar as it is intended to describe something outside standard economics. Loss aversion is often phrased as "people value losses more than equivalent gains." Standard risk aversion, however, does the same. Declining marginal utility of money (unique up to a linear transformation) explains the difference between the value of losses and the value of nominally equivalent gains. This is why riskier investments require higher rates of return and why people purchase insurance. To understand loss aversion in terms of an endowment effect, one needs to incorporate the endowment. The need for such a characterization motivated the above definition in equation (1) and derivation of equation (3).

Prospect theory, as a representation of the endowment effect, is inconsistent with risk aversion for wealth levels below the reference point. Kahneman and Tversky (1979) reported laboratory findings that people are risk-preferring when making choices under uncertainty in this range. These imply that below that reference level, gains outweigh losses. The contribution of reference points to understanding choice, on this account, reduces rather than expands the set of choices that one can represent with loss aversion. Consequently, this conception is inconsistent

with the widespread purchase of insurance, although Schmidt (2012) and Hwang (2016) invoke it to explain gaps in insurance behavior.[10]

Those criticisms are beside the main point, which is that loss aversion and prospect theory are not relevant to the WTA/WTP controversy. The "willingness to" context involves how much of one thing one would give up to get something or require to lose something. They thus concern the degree of substitution among goods. Loss aversion in the prospect theory sense speaks to the marginal utility of increasing or decreasing the ability to purchase more or less of all goods, not the marginal rates of substitution involving the particular good in the endowment.

In addition, prospect theory speaks to the relevance of an anchor regarding a person's actions in uncertain settings. In general, however, the WTA/WTP controversy has nothing intrinsically to do with uncertainty. It concerns how people respond to being ask how much they are willing to pay for, or how much they would accept to lose, a particular thing, like clean air over the Grand Canyon. WTA and WTP differences are not limited to stochastic contexts. Being about money and risk rather than about marginal rates of substitution between certain goods, loss aversion, whatever its conceptual merits or empirical difficulties, provides little guidance on willingness to accept compared with willingness to pay.

6. Kinks: Does "Endowment" Help?

The need to focus on marginal rates of substitution between goods highlights a promising contribution based upon kinks in willingness to pay (Knetsch and Mahasuweerachai 2015). Since willingness to pay or accept are based on how much of other goods is required to compensate for a loss or would be given up for a gain, this kink concept can be applied to indifference curves. This allows us to get WTA > WTP within a preference structure without varying the endowment back and forth based on how a question happens to be posed.

As with the definition of the endowment effect above, one can be somewhat more formal about this. Imagine an indifference curve with a kink at the endowment at some value of x; call it x^*. Indifference curves, from basic textbooks to general equilibrium theory, do not have kinks. Kinks imply discontinuities in demand curves and, without continuity, one cannot guarantee the

[10] The long-standing puzzle has been to explain why people buy both insurance and lottery tickets, as the former implies risk aversion and the latter risk preferring. This is not the place to venture into explanations, but these phenomena suggest that people are risk averse regarding losses and risk preferring regarding gains—the opposite of what prospect theory predicts.

existence of prices that equate supply and demand. As with endowment effects, however, preference orderings with kinks in indifference curves continue to satisfy the fundamental requirements of transitivity, monotonicity, completeness convexity—and can be represented as continuous (if not everywhere differentiable) numerical utility functions. If choices reveal discontinuities, kinks in indifference curves merit consideration as potential explanations.

As Knetsch and Mahasuweerachai point out, a kink in an indifference curve creates a difference between WTP and WTA at the kink. The willingness to give up other goods to increase one's quantity of the good beyond the endowment level x^*, that is, WTP, will be given by the slope of the indifference curve beyond x^*. The willingness to accept more of other goods as compensation for getting less than the endowment level x^* will be given by the slope of the indifference curve as it approaches x^* from levels of x below x^*. For indifference curves differentiable everywhere, there is no difference between these slopes, so the WTP for increases beyond the endowment will at the margin equal the WTA losses from the endowment. But with a kink at x^*, WTA will exceed WTP at the margin.

Nothing fundamental about utility theory rules out a kinked indifference curve as a potential explanation for why WTA exceeds WTP. Such a conception has other testable implications, notably inelastic demand for x at x^* at prices between WTA and WTP, an interpretation of the status quo effect that Giraud (2012) describes. Following the discussion above, perhaps this is an effect of advertising to get x^* into what one regards as one's endowment.

With regard to policy, however, once there is a kink in indifference curves, it is not clear what analytically is gained by calling the point at which the kink occurs an "endowment." The advertising example suggests that one might expect a kink in that person's indifference curves at x^* if there were independent evidence that a person regards x^* as part of her endowment. However, the kink is what drives the result, not whether it is at an "endowment" point as such. Prior explanations of the difference between WTA and WTP based upon the existence of substitutes for additions but not for deletions (e.g., Hanemann 1991) essentially posit a kink, but do so without invoking an endowment effect as such. When indifference curve kinks may explain observed differences between WTA and WTP, invoking an "endowment effect" adds little to our understanding of those differences.

7. The Normative Interpretation

So far, we have seen that while an endowment effect is both plausible and consistent with standard economic analysis, it does not offer much methodologically that we can use to explain

or justify WTA or WTP in calculating the benefits and costs of public policies. However, an interpretation of WTA and WTP as responses to "as if" endowment questions suggests another, normative approach: that the choice between them depends on normative judgments as to whether the policy benefit in question should or should not be treated as part of one's endowment.

Before explaining this further, I should make two points. First, explicitly recognizing ethical norms should be part of the discussion in deciding what evaluation method to employ to determine whether a policy should be enacted. The adage that one cannot derive an "ought" from an "is" implies that the decision to use method M to decide on the policy to be enacted implies that, at least as a rule, M can be justified ethically. Conventional benefit-cost analysis requires at least two normative assumptions: (1) that if someone reveals a preference for *B* over *A*, they should have *B* instead of *A*, all else equal (the Pareto criterion); and (2) that if a policy itself makes some people worse off, it is nonetheless ethically acceptable if an additional policy could have the beneficiaries of the policy compensate the losers so that everyone in principle could be better off (the Hicks-Kaldor principle). The second of these has long been controversial (Zerbe 2001); the "people make mistakes" side of behavioral economics calls into question the first (Brennan 2014).

A second point is that employing a methodological claim, here the endowment effect, to avoid making an explicit ethical choice, here to consider using WTA, has a precedent. Etzioni (1986) proposed that preferences driven by ethics need to be understood as involving separate and noncomparable "multiple" utility functions. Brennan (1989) responded by noting that separation was empirically dubious. People must and do make decisions at the margin between ethical and self-interested actions—for example, how much to donate to charities and how much to reserve for pursuing private interests. The fundamental error in Etzioni's proposal, though, was a category mistake. The question about whether ethically driven motivations deserve more weight than self-interested motivations in social choices is about moral norms. The moral nature of the choice ought not be disguised as a descriptive principle, that options in "ethical" and "self-interest" realms are incommensurable.

The endowment effect, regardless of its empirical significance, does suggest an explicit moral justification for using WTP instead of WTA. As noted above, suppose that one can explain the difference in WTA and WTP as responses to different interpretations, conscious or subconscious, to the separately worded questions. That is, suppose people interpret WTA as "suppose this were in your endowment, then …?" and WTP as "suppose this weren't in your endowment, then …?"

But instead of focusing on whether people implicitly make these interpretations based on what highly malleable conceptions of their endowments *are*, one could take these as being about ethical assumptions regarding what *should* be. For example, suppose that one can make an ethical argument that everyone should be able to count on a specified level of environmental quality, which would not be achieved absent some public policy. If so, then one would ethically be justified in using WTA figures in deciding whether the benefits of such a policy exceed the cost. If not, WTP would be the appropriate question. The rationale for this framing can and should be explicit to respondents. For example, for a policy benefit they ought to have, they should be told to address their valuation as if they already had that benefit and were going to lose it.

Having suggested that one could interpret WTA and WTP as based on how one ought to frame a question in terms of what should be in people's endowments, I must now acknowledge the difficulties in making the underlying ethical argument. If one believes that the basis for ethical considerations is utilitarian, marginal utilities are what matter, and one then has to argue not that there is in fact a kink in relevant indifferences curves, but that there ought to be a kink just at the level of the benefit at issue in a policy choice. On the other hand, suppose one's ethical defense for treating a potential benefit as part of an endowment is that a person has a moral right to that benefit. If so, a society's duty to provide that benefit will be independent of any expression of willingness to accept its loss, as providing the right to vote could be abrogated if voters are given the amount of money they would be willing to accept to part with that right.

Nevertheless, looking at the relationship between the endowment effect and the WTA/WTP difference not as a reconciliation of empirical data with theoretical assumptions, but as a normative predicate to the inherently ethical process of deciding which policies should be undertaken and which should not, provides a potentially useful way of understanding what information is relevant to such decisions.

8. Recap and a Familiar Cautionary Note

The endowment effect may explain why people state that the amount they would need to be willing to accept a loss of something exceeds, by more than the limited bounds in standard economics, the amount they would be willing to pay for that something if they do not already have it. One cannot exclude an endowment effect because it is inconsistent with basic economic principles. Unlike other ideas from behavioral economics, the endowment effect is not about consumers' failing to choose outcomes they most prefer. Economics does not have theories of the origin and change of preference orders that preclude endowment effects, and preferences characterized by endowment parameters or reference points do not violate standard axioms of

transitivity, monotonicity, and completeness. Moreover, some practices, such as advertising or asceticism, may be understood as efforts to change what people treat as part of their endowments or reference points.

That recognized, endowment effects do not seem sufficiently malleable to be changed based on whether valuation questions are framed in WTP or WTA terms. Endowments may well matter, but it is the endowment's direct effect on valuation that could create a difference: holding endowment constant, WTA is still about the same as WTP. Loss aversion or prospect theory does not help. Kinks in indifference curves, while plausible, are not better understood just because we attach the term "endowment" to them. A more fruitful contribution of endowment effects to policy choices is that whether to use WTA or WTP should be based on whether the benefit of the policy should be considered as part of the endowment.

This leads to a familiar but still relevant cautionary note. Reponses to payment hypotheticals outside a market test are problematic, as respondents do not have "put their money where their mouths are." Asked about their willingness to pay for something, however, people may be constrained by having finite money to spend or lacking familiarity with the experience of buying things they do not have. These experiences can be refined to be used the basis for stated preference surveys and focus group responses that not only policymakers but also commercial enterprises use to obtain insights into demand for their goods and services. Responses to willingness to accept questions are not constrained by budgets; people can demand unlimited compensation for a loss. Moreover, if someone believes she may be judged unethical by the surveyor for being willing to accept money for the loss of something distinctively special, if not sacred, she may inflate her willingness to accept to avoid being judged a charlatan.

Apart from the fact that in most cases policy is providing a benefit to people that they do not yet have, difficulties in estimating WTA have been used to justify WTP (Arrow et al. 1993). If WTA responses are prone to error, perhaps WTP should be used instead. Such a choice would be supported by claims that preference effects relating to endowments are not relevant. This may explain resistance to seeing what endowment effects might contribute to policy evaluation. Nevertheless, choosing to look at WTP instead of WTA when there are empirical and, more importantly, normative justifications for focusing on WTA may be an example of, as in the old joke, "looking for lost keys where the light is" rather than looking where the keys might actually be found.

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