

To Trade or Not to Trade: The Endowment Effect and Manipulations of the Reference State

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Abstract

Recent reports suggest that the evidence of a disparity between people's valuations of gains and otherwise commensurate losses may be due to experimental procedures used to elicit such observations. Evidence from new experiments, reported here, indicates that the presence or absence of the valuation disparity may instead be due to impacts of procedures on the reference states that people perceive when making their choices. Further, the controls on valuation procedures that appear necessary to eliminate the valuation disparity are not likely to be reflected in many important cases for which valuations are normally made.

To Trade or Not to Trade: The Endowment Effect and Manipulations of the Reference State

The widely observed disparity between people's valuation of gains and their valuation of otherwise commensurate losses – the so-called endowment effect – has generally been held to depend on the reference state used to value the change (Daniel Kahneman and Amos Tversky, 1979; Richard H. Thaler, 1980). Owing to what is thought to be a pervasive, though not universal, “kink” at the reference in the value function used to assess the impacts on an individual's welfare, positive or negative changes in the domain of losses short of the reference, are valued more than positive or negative changes in the domain of gains beyond the reference state. Consequently, *ceteris paribus*, people are often reluctant to exchange a good A for another good B, as giving up A involves a more highly valued loss and acquiring B is a less valued gain. Similarly, they commonly demand more compensation to give up an entitlement than they are willing to pay to acquire it (reviewed in, for example, W. Samuelson and Richard Zeckhauser, 1988; Matthew Rabin, 1998; and, with a focus on environmental values, John K. Horowitz and Kenneth E. McConnell, 2002).

Attention given to the valuation disparity has centred to a limited extent on implications for analyses of, for example, market behaviour (Daniel S. Putler, 1992; and Terrance Odean, 1998) and assessments of damages and the like (David Cohen and Knetsch, 1992); and to a larger extent on demonstration of instances where the disparity is not in evidence or disappears with repeated trials, and on counter explanations and demonstrations (for example, Don L. Coursey, John L. Horvis, and William D. Shultze, 1987; Knetsch and John A. Sinden, 1987; David W. Harless, 1989; Jason F. Shogren, et al., 1994; Knetsch, Fang-Fang Tang, and Thaler, 2001; and John A. List, 2003). However, somewhat curiously given its importance, relatively little evidence has been reported on the identification of variables that are likely to influence the reference state that people use in assessing the value of a change and, consequently, the presence and size of the valuation differences.

A recent notable exception to the relative neglect of determinants of the reference state, are the experimental results reported by Charles Plott and Kathryn Zeiler which demonstrate that the common asymmetry between people's valuation of gains and losses can be made to grow and to disappear by manipulating the context or circumstances under which the valuations are

made (2005; and, in press). While their major concern was with the response of people to the varied experimental procedures used in different treatments and how the disparity can be eliminated by procedural controls, in doing this they have also brought overdue attention to the role of the reference state in determining the value of a change and, perhaps, to a better understanding of the conditions necessary for valuations to conform to those assumed in standard theory and the extent to which such conditions are unlikely to prevail when real choices are made and valuation disparities become the expected result.

In a first set of experiments Plott and Zeiler (2005) both relaxed and imposed various procedural controls on participants, such as including or excluding paid training rounds of an incentive compatible value elicitation process, providing and not providing for learning and adjustments to bids and offers, and for participants' anonymity when declaring decisions and collecting payouts. The results showed that implementing such controls brought about a dramatic elimination of the large disparities between gain and loss valuations which were evident when these controls were absent.

A similar strategy was used by Plott and Zeiler (in press) to demonstrate that imposing a select set of controls on experimental procedures resulted in the elimination of an otherwise strong reluctance to trade one good for another that was evident when these controls were relaxed. These variable controls included such restrictions as having or not having the good to be given up placed in front of the participants at the time they decided to make an exchange or not, whether the intention to exchange was signaled by a show of raised hands or by marking a printed form in private, and if the good to be potentially traded is randomly assigned or chosen by the experimenter and explicitly given as a gift to each participant.

In the design of their experiments and in the interpretation of the results, Plott and Zeiler presume that the reference state is associated with ownership of a good or entitlement – “Endowment effect theory predicts we will observe an exchange asymmetry in both treatments studied given that ownership is present in both” (in press, p. 15). As they hold ownership constant across all treatments, if there is an endowment effect it should then be present in all of these cases. However, as asymmetries are only observed when procedural controls are sufficiently lax to allow for the well-known incentives of classical preference theory, such as signaling, cascades due to public revelation of choices, transactions costs, suggestions of relative value, and regard for others, to induce such disparities, and disappear when these are

controlled for, they conclude that disparities are more likely due to experimental procedures than to any differential impact of the reference state.

But ownership may be just one factor determining an individual's reference state, and as the results of the present experiments suggest, ownership appears to be neither necessary nor sufficient to induce a reference state from which positive and negative changes are valued differently.

The manipulations used in the Plott and Zeiler experiments no doubt control for differing gains and loss valuations that were procedurally driven – which was the express purpose of their design. However, these procedural controls also appear to have a large impact on the reference state that people use to value changes or proposed changes, and consequently on their motivation or reluctance to trade entitlements and the sums they are willing to pay for an entitlement or demand to give it up. For example, in imposing the full set of controls that included taking away the good owned by participants and replacing it with an alternative and then asking which one they wished to take home, there was likely little feeling of a loss of the first good to gain the other – the reference state that would have produced such attachments or sensations was probably nullified by these procedural controls.

There are then two alternative explanations for the appearance and disappearance of the endowment effect reported by Plott and Zeiler. The first is that experimental procedures alone can induce asymmetries by allowing opportunities for the incentives of classic preference theory to operate, and these can, therefore, be eliminated by appropriate controls. Although procedures that allow such opportunities may well be one source of the observed disparities, a second alternative is that manipulations of procedures to eliminate such chances may change the reference state and it is this rather than the procedural controls per se which lead to the on and off results.

A further set of experiments, reported here, were carried out to test the extent to which the procedural controls manipulated in the Plott and Zeiler experiments had a direct impact on not only respondents' understanding of the valuation task, but on the reference state that they used in their valuations of the proposed gain and loss, and consequently on their propensity or reluctance to make exchanges. Manipulations of the reference state were made across different treatments, while maintaining the procedural controls suggested by Plott and Zeiler as being necessary to prevent misconceptions of the task on the part of participants and to control for

the differential incentives recognized in classic preference theory. The results provide clear evidence that the reference state matters, and that the results from differing procedural control manipulations were likely in large part due to their impacts on the reference states perceived by participants.

I. Experiments

The second set of experiments carried out by Plott and Zeiler (in press) provides the most convenient model for testing the role of the reference state in accounting for their results. Having participants exchange, or not exchange, one good for another is not only simple, but as they note, "...avoids rate of substitution measurement and thus avoids the complex elicitation procedures ..." (in press, p.4) that they investigate in their first set of experiments.

Two treatments were carried out with students recruited from those attending tutorial sections of an economics class at the National University of Singapore,¹ with the major characteristics of each and the results summarized in Table 1. No payment was made for taking part in the experiment, but all entitlements and trades were real, and all participants took away, depending on their initial entitlement and the result of any trade, either a plastic travel mug with the university insignia imprinted on it that was special ordered and not otherwise available, or a reasonably good metal pen that was of comparable monetary worth of about S\$8.² In both treatments, participants were told that the exercise involved answering some questions³ on a survey form and that they were not to communicate with each other nor react verbally to events during the exercise.

The major manipulations centred on the strength of the reference state believed to govern how people feel about giving up an entitlement relative to their gaining one, and on ownership – whether or not the good traded away was owned by the individual at the time this decision was made.

It is clear, as Plott and Zeiler have demonstrated, that procedural controls can induce or eliminate a reluctance to trade. But these controls may also change people's perception of the reference state and it may be this and not the procedural controls which are responsible for the

¹ Results from an earlier, and unrelated, series of experiments carried out at both Simon Fraser University, in Canada, and NUS, in Singapore, showed very similar preferences and choices, suggesting little reason for any lack of generality in the present findings (Knetsch, Tang, and Thaler, 2001).

² The Singapore dollar was worth about USD 0.70 at the time.

³ The questions were unrelated to the purpose of the experiment.

differing outcomes. Their experiments leave the most likely explanation in doubt. Further, Plott and Zeiler implicitly assume that ownership is necessary for the establishment of a reference point, and that it is only improper procedures which have given rise to the empirical suggestion of a kink at this point and the resulting inhibition to trade. A test of the plausibility of these assumptions is provided by including ownership as a treatment variable. Ownership was paired with a weak reference of attachment to an entitlement in Treatment 1, and non-ownership was paired with a strong reference of attachment in Treatment 2. The relative strength of ownership and the reference state should lead to very different outcomes. If it is the reference which exerts the stronger effect, then Treatment 1, with a weak attachment reference and ownership, should result in many trades, and Treatment 2, with a strong reference and no ownership, should induce a reluctance to trade. A stronger ownership effect should induce the opposite outcomes.

The results from Treatment 1 showed that the reluctance to trade motivation provided by ownership may well be important, but even so it can be totally undermined, with trades abounding, by manipulations that weaken this otherwise natural reference state. In contrast, a very strong reluctance to trade stemming from a large valuation disparity, was induced by manipulations giving rise to strong feelings of a reference state of attachment – these included, among other things, having the good present even in the absence of actual ownership (Treatment 2).⁴

Treatment 1 – Owned, Weak Reference

The 89 participants taking part in this treatment did so in four groups ranging from 20 to 26 individuals each. All participants in a group were told they owned either a mug or a pen, with the choice of which good (a mug or a pen) to be given to them having been determined by a random draw, and that people in the other group were being given the alternative to theirs.

Ownership was conveyed by telling them:

“For taking part in this exercise, each of you has earned a mug [pen] which is yours to take home with you. In other words, you now own a mug [pen] which you can collect at the end of this exercise to take with you.”

⁴ As endowment may imply ownership, a more appropriate term describing the disparity might be a “reference effect”.

After the questionnaires were completed, a “decision form”, similar to those used by Plott and Zeiler, was given to each participant asking them to “tick the item you wish to take home with you” (a mug or a pen). When the decision forms were completed the experimenter collected them and gave each either a mug or pen in accord with their choice.

While ownership of one or the other was established, the reference state normally conveyed by this was deliberately weakened by not giving physical possession of the good they owned at the time they completed their decision forms. Instead, both mugs and pens were passed around for everyone to examine, and then collected from them, before they started completing the questionnaire. This, together with the other controls of a random assignment of the initial entitlement across groups, and the use of decision forms to avoid any public display of preferences, appeared to be sufficient to weaken any feeling of a reference state that would lead to a reluctance to exchange their initial entitlement for the alternative.

As indicated in Table 1, exactly half of the 42 participants who were given a pen traded for a mug and the other half kept the pen; and essentially the same was true for the 47 people who were given a mug, with 23 keeping it and 24 exchanging it for a pen. There was no evidence of an endowment effect – this manipulation of the reference state did away with any valuation disparity and resulted in a total absence of any reluctance to trade.

Treatment 2 – Not Owned, Strong Reference

Each individual in each group in Treatment 2 was given either a mug or a pen, which was then left with them while they completed the questionnaire, with the choice of good for each group predetermined without mention of any random selection. The lack of ownership but strong feeling of a reference state of attachment were induced by oral and written instructions:

“You do not own this mug [pen] yet. Later, if you complete this exercise you will earn it and you can take it home with you. You can inspect it now. But please do not use it yet.”

After completion of the questionnaires, the alternative of a pen [mug] was passed around and each participant was allowed to inspect it before it was passed back to the experimenter and put at the front of the room.

After telling the participants that they could give up earning the mug [pen] later in exchange for earning a pen [mug], an exchange form was given to each on which they indicated whether they wanted to “earn and keep the mug [pen]”, or “give up earning the mug [pen] and earn a

pen [mug] instead.” All necessary exchanges were then made as the forms were collected after completion of the survey questionnaire.

In contrast to Treatment 1 in which a weak reference was induced and trades flourished, the strong reference prompted by the procedures of Treatment 2 of having the good at the time of decision, using an exchange form, and having the initial entitlement predetermined, induced a great, and highly significant ($p = 0.00$), reluctance to exchange the initial entitlements. Only 14 percent of 54 initial pen holders traded for a mug, and 33 percent of the 46 initial mug holders traded for a pen. In this case it seems clear that, despite the lack of ownership, inducing a feeling of loss that would accompany an exchange that is brought about by this manipulation of the reference state, is enough to cause these individuals to demand more to accept the loss than they are willing to sacrifice for a commensurate gain.

II. Discussion and Conclusions

The results from Treatment 1 very closely mirrored those from the Full Set of Controls Treatment used by Plott and Zeiler. There was here also no evidence of any reluctance to give up present holdings and engage in trades. The difference between the proportion of people given mugs who kept them and the people given pens who traded for a mug was minus one percent in the present experiment (Table 1), and minus 13 percent for the full control treatment of Plott and Zeiler.

The strong propensity to exchange evident in Treatment 1, despite the assignment of ownership, is in sharp contrast to the very marked reluctance to give up an entitlement in Treatment 2 in which procedures were designed to shift the reference state used to evaluate the consequences of a trade towards one that revealed the disparity, even in the absence of ownership. In this case the initial allocation, having the good in front of them for the whole time, and the wording of the exchange form in this Treatment, all appear to have engendered a reference of having the good or at least the right to acquire it. Giving this up would therefore be felt as a more aversive loss rather than the much less aversive foregoing of the opportunity to acquire the alternative good.

It should be noted that while the initial assignment of one or the other good was determined for each good by the experimenter with no mention of it having resulted from any random process, other procedural controls suggested by Plott and Zeiler, such as the use of “decision

forms” to avoid public display of preferences, were put in place in Treatment 2. Further, the reference state which resulted in the paucity of trades was induced by the procedures, in spite of the added variable of individuals not actually owning the good at the time the decision to trade or not was made – a variable that would normally encourage exchanges as people would presumably then feel less attachment to the good.

There are, as Plott and Zeiler suggest, large numbers of variables that might influence people’s adoption of a reference position for valuing a proposed change. Further search for such explanatory variables, and testing for their importance in differing circumstances, would likely be helpful for better understanding and predicting of reference states and of the relative magnitudes of valuation disparities that might be expected to result.

However, it also seems useful to compare the manipulation used to eliminate the endowment effect, and consequent reluctance to trade, to real cases in which economic analyses are used for the usual purposes of explaining, predicting, and prescribing (several such cases are discussed in Cameron, 2001). Is it likely, for example, that conditions analogous to those of Treatment 1, and the Full Controls Treatment used by Plott and Zeiler, are the norm for market behaviour and for issues that matter to people and that little reluctance to trade will be observed in the world and that people will demand no more to accept a loss than they would pay to receive a like gain? There are no doubt instances in which this is the case. A merchant, or professional trader, would surely not feel a sense of loss in making a sale, as this is the nature of their business⁵ – though the same seller might well have a disproportionate feeling of loss on other dimensions of an enterprise, such as a present business location, an adjacent expanse of vacant land, or acquisition or disposition of other easily exchangeable assets. But, the conditions of Treatment 1 that were necessary to encourage exchanges were fairly severe, involving acquiring the entitlement through some random process, not having possession or a feeling of possession when considering dealing it away, and doing it all in secret. Such conditions might not be expected to prevail in many cases of importance.

The evidence that investors are reluctant to realize a loss by selling a security that is trading at a price below its acquisition price, relative to their willingness to sell ones that have gone up

⁵ This might help explain the difference between visitors to a trade mart and traders renting booths or tables at such markets in their reluctance to give up a trading card (List, 2003) – it may well have less to do with traders having more experience and more to do with the difference in reference between traders, who were there to engage in trades, and visitors, who had no such reason to attend.

in price, suggests a reference state related to the price that was originally paid (Shefrin and Stateman, 1985; and Odean, 1998). Similar behaviour has been found in the housing market, where again the purchase price had a clear influence on the reference (Genesove and Mayer, 2001).⁶ These are behaviours more consistent with a disparity between the value of losses and gains, than it is with the conditions necessary to induce valuation equivalence, such as those of Treatment 1.

The observation that egg purchasers were more sensitive to price increases, which impose a loss, than to decreases, that confer a gain, leading to an estimated price elasticity of -1.10 for the former and only -0.45 for the latter, also seems more consistent with greater concern with a negative change than with a positive one (Putler, 1992). In this case, the reference is apparently associated with departures from what people regard as a reference transaction – likely their previous egg purchases.

The decisions of workers to increase contributions to their pension scheme from 3.5 percent of their wages when the choice was a deduction from their expected pay, to 11.6 percent when offered as foregoing a portion of a future wage increase, is another example of real and meaningful choices being influenced by well formed reference states (Thaler and Berartzi, 2004). A loss from the set wage was quite clearly more aversive than the reduction of a gain.

It also seems likely that individuals have a well-formed reference when confronted with a choice between mitigating a harm, or loss, and acquiring a gain. For example, when asked if they would favour a replacement of a failed bridge or construction of a new one, both of which would cost the same and confer the same benefits of time savings, and the like, knowledgeable respondents overwhelmingly chose the first rather than be indifferent as prescribed by conventional views of gain and reduction of loss equivalence (Chin and Knetsch, in process).

On present evidence, the disparity between people's valuations of gains and losses appears to be a pervasive but perhaps not universal characteristic of their preferences. Further, the persistence and size of the disparity may well be influenced by circumstances of their measurement. However, in many important cases, the disparity can be expected to be large and persistent, and to call for more serious attention.

⁶ Interestingly, their results also showed that “both investors and owner-occupants behave in a loss-averse fashion, although investors exhibit about one-half of the degree of loss aversion as owner-occupants”, likely reflecting a weaker reference focus on the part of investors. (Genesove and Mayer, 2001, p.1235).

References.

- Camerer, Colin., (2000), "Prospect Theory in the Wild", in: Daniel Kahneman and Amos Tversky, (eds.), *Choices, Values, and Frames*, Cambridge University Press, Cambridge, UK.
- Chin, Anthony, and Jack L. Knetsch, (in process), "Values Depend on the Measures: Are Many Transport Project Valuations Seriously Biased?"
- Cohen, David, and Jack L. Knetsch, (1992), "Judicial Choice and Disparities Between Measures of Economic Values", *Osgoode Hall Law Journal*, 30:737-770.
- Coursey, Don L., John L. Hovis, and William D. Shultze, (1987), "The Disparity Between Willingness to Accept and Willingness to Pay Measures of Value", *The Quarterly Journal of Economics*, 102:679-690.
- Genesove, David, and Christopher Mayer, (2001), "Loss Aversion and Seller Behavior: Evidence from the Housing Market", *The Quarterly Journal of Economics*, 116:1233-1260.
- Harless, David W., (1989), "More Laboratory Evidence on the Disparity Between Willingness to Pay and Compensation Demanded", *Journal of Economic Behavior and Organization*, 11:359-379.
- Horowitz, John, and Kenneth McConnell, (2002), "A Review of WTA/WTP Studies", *Journal of Environmental Economics and Management* 44: 426-447.
- Kahneman, Daniel, Jack L. Knetsch, and Richard H. Thaler, (1991), "The Endowment Effect, Loss Aversion, and Status Quo Bias", (1991), *Journal of Economic Perspectives* 5, 193-206.
- Kahneman, Daniel, and Amos Tversky, (1979), "Prospect Theory: An Analysis of Decisions Under Risk", *Econometrica* 47: 263-291.
- Knetsch, Jack L., and John A. Sinden, (1987), "The Persistence of Evaluation Disparities", *Quarterly Journal of Economics*, 102:691-695.
- Knetsch, Jack L., Fang-Fang Tang, Richard H. Thaler, (2001), "The Endowment Effect and Repeated Market Trials: Is the Vickrey Auction Demand Revealing?", *Experimental Economics* 4:257-269.
- List, John A., (2003), "Does Market Experience Eliminate Market Anomalies?", *Quarterly Journal of Economics* 118:47-71.
- Odean, Terrence, (1998), "Are Investors Reluctant to Realize Their Losses?" *The Journal of Finance* 53:1775-1798.

Plott, Charles R., Kathryn Zeiler, (2005), “The Willingness to Pay – Willingness to Accept Gap, the ‘Endowment Effect,’ Subject Misconceptions, and Experimental Procedures for Eliciting Valuations”, *The American Economic Review* 95:530-545.

Plott, Charles, and Kathryn Zeiler, (in press), “Asymmetries in Exchange Behaviour Incorrectly Interpreted as Evidence of Prospect Theory”, *The American Economic Review*.

Putler, Daniel S., (1992), “Incorporating Reference Price Effects Into a Theory of Consumer Choice”, *Marketing Science*, 11:287-309.

Rabin, Matthew, (1998), “Psychology and Economics”, *Journal of Economic Literature* 36:11-46.

Samuelson, William, Zeckhauser, Richard, (1988) “Status Quo Bias in Decision Making”, *Journal of Risk and Uncertainty* 1:7-59.

Shefrin, Hersh, and Meir Stateman, (1985), “The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence”, *Journal of Finance*, 44:777-790.

Shogren, Jason F., S. Y. Shin, D. J. Hayes, and J. B. Kliebenstein, (1994), “Resolving Differences in Willingness to Pay and Willingness to Accept”, *The American Economic Review*, 84:225-270.

Thaler, Richard H., (1980), “Toward a Positive Theory of Consumer Choice”, *Journal of Economic Behavior and Organization*, 1:39:60.

Thaler, Richard H., Shlomo Benartzi, (2004), “Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving”, *Journal of Political Economy* 112:S164-S182.

Table 1. Design Features and Results of Symmetry Experiment Treatments

Treatment	1. Owned Weak Reference	2. Not Owned Strong Reference
Initial Entitlement	Random across groups	Predetermined across groups
Randomization	Random draw for group	---
Possession at Time of decision	No	Yes
Exchange Form	Take home mug or pen	Earn and keep give up earning
Results		
# Initial Mugs	47	49
# Keep Mug	23	33
# Trade for Pen	24	16
# Initial Pens	42	49
# Keep Pen	21	42
# Trade for Mug	21	7
% Initial Mugs keep mugs,	49%	67%
% Initial Pens trade for mugs	50%	14%
Difference	-1%	53%

Appendix: Instructions

Treatment 1: Owned, Weak Reference

Written Instructions: Give to participants (Also read aloud)

This is a straightforward exercise that involves answering some questions on a survey form. There are no right or wrong answers to the questions; your answers will depend on your preferences and opinions. We just want your honest answers.

We ask that you do not communicate with other people during the exercise. Do not share the answers to the questions you will be asked with anyone. Also, please refrain from verbally reacting to events during the exercise. This is very important.

Note to Experimenter: After instruction sheet has been given out and read, answer any questions.

Pass around both a mug and a pen for each participant to examine. Do not leave either good with the participants.

Say: *“For taking part in this exercise, each of you has earned a mug [a pen] which is yours to take home with you. In other words, you now own a mug [a pen] which you can collect at the end of this exercise to take with you.*

The participants in the other session have earned a pen [a mug]. Whether the participants in a particular session earn a mug or a pen is determined by a random draw.

Later, you will be given the opportunity to exchange whatever good you now own, based on a random draw, for the other good. Which good you choose to end up with and take with you will be up to you.

Hand out the questionnaire.

Say: *“Please answer each of the questions in the questionnaire, and answer as truthfully as you can.*

Say: *“Please indicate the good you wish to take home with you on the decision form.”*

Hand out the decision form to each participant.
 Then ask participants to complete the decision form.
 (They will have neither a mug or a pen in their possession in front of them.)

*“Please tick the item you wish to take home with you.
 [] Mug
 [] Pen.”*

When decision forms are completed, walk around the room to collect the decision forms, determine if they are to receive a mug or a pen, and give them whatever good they have chosen.
 Collect the questionnaires.

Treatment 2: Not Owned, Strong Reference

Written Instructions: Give to participants (Also read aloud)

This is a straightforward exercise that involves answering some questions on a survey form. There are no right or wrong answers to the questions; your answers will depend on your preferences and opinions. We just want your honest answers.

We ask that you do not communicate with other people during the exercise. Do not share the answers to the questions you will be asked with anyone. Also, please refrain from verbally reacting to events during the exercise. This is very important.

Note to Experimenter: After instruction sheet has been given out and read, answer any questions.

Hand out a mug [or a pen], to each participant

Say: *“You do not own this mug [pen] yet. Later if you complete this exercise you will earn it and you can take it home with you.
 You can inspect it now. But please do not use it yet.”*

Leave the mug [pen] with each participant while they answer the questionnaire.

Hand out the questionnaire.

Say: *“Please answer each of the questions in the questionnaire, and answer as truthfully as you can.”*

When participants are finished answering questions, pass around a pen [mug]

and allow time for each person to inspect it. Do not leave any pens [mugs] with participants.

Say: "If you prefer, you can give up earning the mug [pen] later in exchange for earning a pen [mug] later.

Hand out the exchange forms to each participant.

"[] I want to earn and keep the mug [pen]

[] I want to give up earning the mug [pen] and earn a pen [mug] instead"

Then ask participants to complete the exchange form.

(They still have the mug [pen] in their possession in front of them.)

When the participants have completed the exchange forms, walk around room collecting and checking exchange forms and make all necessary exchanges.

Collect the questionnaires