INTERMEDIATE OPTIONS REDUCE RELUCTANCE TO TRADE: ADAPTATION PROCESSES AND THE BOILED FROG EFFECT

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Abstract

Research has shown that the endowment effect is reduced when the tradeoffs between the endowment and an alternative are small. We show that the endowment effect can also be reduced for options with large tradeoffs by presenting an intermediate option. We induce a reference-point shift by merely presenting an intermediate product to participants. Whether or not participants trade their endowment for this intermediate option, their likelihood of accepting the large tradeoff is significantly increased by its presence. We suggest that the anticipatory adaptation to the ownership of the intermediate option shifts the reference point away from the current endowment and toward the more extreme option, thereby increasing its relative attractiveness. Because consumer markets are often saturated, the present research suggests that the introduction of a new product may be more successful when incremental rather than abrupt.

Keywords: *Behavioral and experimental economics; Choice; Consumer decision making*

Academic and Managerial issue

Identifying the factors that make new products succeed has long been a managerial research priority. One explanation for the high failure rate of innovative new products is the endowment effect (Gourville, 2006; Thaler 1980). People are reluctant to trade an endowment for an alternative option because the loss incurred by giving up the endowment looms larger than the gain achieved by obtaining the alternative (Kahneman, Knetsch, and Thaler, 1991). Take for example Microsoft, a company that successfully persuades consumers to trade an existing product for a new one every few years (e.g. Windows 95 for Windows 98). When Vista was launched 5 years after Windows XP, the differences in the two products were tremendous. Vista was much more secure than XP, but also used greater system requirements. Adoption of Vista has been disappointing.

In multi-attribute contexts, the magnitude of this "endowment effect" differs as a function of the size of gain-loss tradeoffs. Specifically, people are more willing to trade their endowment for an option that is a combination of a small gain and a small loss than for an option that is a combination of a large gain and a large loss (Chapman, 1998; Tversky and Kahneman, 1991). This helps to explain why highly innovative products fail at a greater rate than less-innovative products (Cooper 2000).

Research proposition

In this research, we argue that the endowment effect associated with failures to adopt new products that are very different from the current ones can be attenuated by simply presenting an intermediate option to consumers. Whether or not they adopt the intermediate option, its mere consideration can move consumers' reference point and hence ease the transition to a more extreme tradeoff. Theoretically, when a reference point is shifted away from an endowment like XP and toward an alternative like Vista, the consumer will be more likely to accept the alternative.

Literature Review

Similarity and the endowment effect

People tend to value an item more when it is in their possession than when it is not in their possession (Kahneman, Knetsch, and Thaler 1991; Strahilevitz and Loewenstein 1998). This

follows from two fundamental findings, namely reference dependence and loss aversion (Tversky and Kahneman 1991). When an individual is endowed with an option, this option acts as his reference point. Changes with respect to this reference point are framed as losses and gains: for an individual who is given the opportunity to trade his endowment for an alternative, giving up the endowment is considered as a loss, whereas receiving the alternative is viewed as a gain. However, because losses loom larger than gains, people have a strong tendency to keep the endowment. These referent-dependent preferences also apply to an attribute-level adoption of products. The currently owned option's attributes values are likely to act as reference points, against which the values in alternative multi-attribute options are coded as losses and gains. Loss aversion makes attributes for which the trade would imply a loss more relevant, and thus leads to a status quo bias. This framework would explain why innovative products that may be perceived as relatively superior to existing alternatives do not succeed in the market. As long as new products do not dominate entrenched alternatives, adoption decisions imply trade-offs and introduce loss aversion.
In multi-attribute situations, reference-dependent preferences and loss aversion entail that the magnitude of reluctance to trade is different for different endowment-alternative pairs (Chapman 1998). This helps to explain why highly innovative products fail at a greater rate than less-innovative products (Cooper 2000). In particular, an option which is framed as a combination of a small gain and a small loss is perceived as a better alternative to the endowment than an option which is framed as a combination of a larger gain and a larger loss (Munro and Sugden 2003; Tversky and Kahneman 1991). This makes people more willing to choose smaller rather than bigger shifts from the reference points (Samuelson and Zeckhauser 1988). The likeliness of acceptance of a new product may critically depend on its degree of similarity with the consumer's actual endowment.

Reference point shifts

Reference points are not fully determined by actual endowments, but they are also sensitive to aspirations, expectations, norms, and social comparisons (Tversky and Kahneman 1991, Heath et al. 1999). Consumer research provides large evidence that people can become attached to products that they do not own, and these can in turn act as reference points. Consumers can become attached to choice options during the deliberation process before choosing among them, such that when one of them is selected, the non-chosen options are perceived as losses with respect to the potential owning induced by the deliberation process (Carmon, Wertenbroch, and Zeelenberg 2003). Studies on

overbidding show that during auctions, bidders develops a sense of ownership for the auctioned objects (Heyman, Orhun, and Ariely 2004), thereby willing to pay increasing sums of money for them. Sen and Johnson (1997) found that the mere possession of a rebate coupon for a choice option makes that option the reference point of the choice, against which choosing another product is perceived as a loss. This is also consistent with research on object valuation that shows that "feeling of ownership" rather than actual ownership is responsible for increases in object valuation (Peck and Shu 2009; Reb and Connolly 2007; Wolf, Arkes, and Muhanna 2008). In general, there is evidence that people adapt to consequences of discrete events, such as ownership, well before these events occur – a pattern called anticipatory adaptation (Frederick and Loewenstein 1998).

Theoretical Background and Research Hypothesis

It is proposed that both ownership and expectations, being major antecedents for the consumer's reference point, may be strategically exploited to shift the adaptation level from endowment towards the alternative option, and in turn improve the valuation of the latter. A straightforward way to shift a reference point toward an alternative is to somehow induce an adoption of an intermediate option that incrementally decreases the attribute on which the endowment is superior and incrementally increases the attribute on which the alternative is superior. In particular, a consumer whose reference point is shifted from the endowment to a point that is closer to the alternative would be less reluctant to accept the alternative. Given that ownership does not necessarily have to be present in order for consumers to feel loss aversion associated with the product, it is possible that intermediate options can serve as reference point shifters without actual adoption. In other words, a consumer considering trading an endowment A for a new product C may be more likely to make that trade in presence of an intermediate product that without it, regardless of whether he adopts B or not. In either case, the intermediate option represents both a small tradeoff with respect to the endowment and the alternative, thus making easier the departure from the reference point and increasing the relative attractiveness of the alternative.

Method and Results

We tested these predictions in three experiments, which were conducted either on the lab or on the web through Amazon Mechanical Turk. Study 1 and Study 2 use tickets for a hypothetical concert

as stimuli to show that a pattern of incremental adoption of an alternative to the current endowment is more likely to be successful than a pattern of immediate adoption. In Study 2, we show that this is valid both when the intermediate option between the status quo and the alternative is actually adopted and when the intermediate is considered but not actually adopted. We argue that even if people did not adopt the intermediate product, they behave similarly as if they did, as long as they had the possibility to adapt to the idea of owning it. In Study 3 we focus on this mechanism of anticipatory adaptation by using a variation of a classic mug experiment, thereby providing support for our proposition and extending previous findings on perceived ownership and object evaluation. In the remainder of this section I briefly present these three studies. In a fourth study under development, we want to show that the results of an incremental adoption pattern depend positively on the similarity between the decoy (either a mug or a highlighters pack) and the target option (a different mug), thus ruling out the alternative hypothesis that the increased attraction for the target is triggered by the mere existence of a decoy.

Study 1. We tested the proposition that the exposure to a third, intermediate option reduces the endowment effect, such that the probability to reject a trade is reduced if participants have previously encountered an opportunity to trade the endowment for an alternative. This study used tickets for a hypothetical concert as stimuli. The tickets were characterized by tradeoffs in terms of proximity to friends and proximity to the stage. Critically, we were interested in unwillingness to trade an option that is superior on one attribute for an option that is superior on the other attribute. We hypothesized that, regardless of whether the original endowment is superior on proximity to friends or proximity to stage, unwillingness to trade the endowment will decrease if participants are presented with an intermediate option before the trading stage.

In the condition with no intermediates, only 29.63% of participants chose to trade the set of tickets with which they had been endowed. This is significantly lower than the 50% trading rate that is expected under the null hypothesis of neither reluctance nor over-willingness to trade, therefore revealing an endowment effect. Among participants who encountered the choice of whether to trade their endowment with the intermediate option, 47.06% later traded their tickets with the opposite set of tickets. This trading rate is significantly higher than the 29.63% trade rate in the previous condition, meaning that the exposure to an intermediate option reduced the reluctance to give up the endowment. Moreover, 47.06% is not significantly different from the neoclassical 50% prediction, meaning that the endowment effect is statistically non-existent due to the presence of an

intermediate option between the endowment and the alternative.
In short, results support the hypothesis that the exposure to an intermediate option reduces the reluctance to trade the endowment with the target option. Because of the small number of subjects in certain cells, Study 1 is agnostic about whether it is sufficient to expose people to an intermediate option in order to reduce their reluctance to trade the endowment for an alternative, or it is necessary to make them actually adopt the intermediate option. Study 2 attempts to isolate the effects on evaluation of a certain option that result from an actual vs. a mental shift of the individual into a state that is closer to such option.

Study 2. We manipulated whether people endowed with a "far" ticket and exposed to an intermediate ticket in terms of proximity to the stage were actually obtaining this ticket or not. If our hypothesis is right, the evaluation of a "close" ticket, which was determined by eliciting the hypothetical willingness to pay for this ticket, should increase for both groups of people with respect to a baseline condition were participants were not exposed to the "middle" ticket. We found support for this hypothesis, therefore proving that people's reference points can be effectively pulled towards an alternative in order to improve its evaluation. The reference point shift can be driven by the actual substitution of the current endowment, such that the new endowment is closer to the alternative; this means that people are more likely to give up their endowment to adopt an alternative if this process happens "incrementally" rather than "instantaneously". Such result resembles the famous "foot-in-the-door" effect in social psychology (Freedman and Fraser 1966), and the anecdote that if a frog is placed in boiling water, it will jump out, but if it is placed in cold water that is slowly heated, it will not perceive the danger and will be cooked to death.
However, we also proved that the actual adoption of a new option is not necessary for inducing a shift in the reference point. Expectations to own an option, being legitimate or not, can be enough to shift reference points away from the status quo and towards this option. Because the object of such anticipatory adaptation is determined along some psychological dimensions, the described process affects not only the evaluation of the object, but also the evaluation of further options that are described on the same dimensions. In this study, the willingness to pay for a more extreme option was increased because of respondents' anticipatory adaptation to an intermediate option. When participants did not get the middle ticket, nonetheless their evaluation of the close ticket were increased with respect to the baseline. Because participants were not endowed with the middle option, there was no room for a post-adoption shift of their reference point; only anticipatory

adaptation to the middle ticket could have caused the value attached to the close ticket to increase. We focused on this mechanism in Study 3.

Study 3. With the aim of giving a closer look to the underlying mechanism of anticipatory adaptation to the decoy option, we reason that if this process is responsible for the increased valuation of the target, all the more so it would be reflected in valuations of the object of adaptation itself. Therefore, a more direct test of the proposed mechanism, which would help in the understanding of the incremental adoption pattern, entails to test if adapting to the idea of owning an object increases its valuation.
In this study we tried to manipulate anticipatory adaptation by inducing in some participants a credible expectation to own a mug. We measured whether their evaluation differed from that provided by people who were not expecting to own the mug. By doing so, we paralleled and extended the experimental findings on "feeling of ownership." (Peck and Shu 2009; Wolf, Arkes, and Muhanna 2008). Results show that people naturally adapt to ownership during the time they expect they will own an object, as revealed by increased evaluations of such object.

Theoretical and managerial implications

We contribute to research on reference-dependence and loss aversion by showing that the endowment effect can be removed by promoting an incremental rather than intermediate adoption of the alternative option. Progressively shifting the individual's reference point is a successful correcting strategy to overcome the bias towards the status quo that derives from reference-dependent preferences and the fact that losses loom larger than gains. We prove that the reference point can be shifted towards the alternative both through the actual adoption of an intermediate option and through its mere consideration. This happens because both ownership and expectations are antecedents of the individual's reference point. By focusing on anticipatory adaptation, in Study 3 we also generalized out of the auction setting the so-called "pseudo-endowment effect" (Heyman, Orhun, and Ariely 2004), the fact that bidders in online auctions are willing to pay increasing sums of money for objects they expect to own. By showing the object on a web page, we also expanded previous research on "feeling of ownership" that manipulated exposure to an object by using contact or physical presence, thereby contributing to the aim of understanding which kind of exposure is required to induce adaptation to ownership (Wolf, Arkes, and Muhanna 2008).

These results inform managers by proposing an effective strategy to introduce products that put in place large tradeoffs with respect to current endowments. Consumers are more likely to accept a product that is "psychologically far" if they have the opportunity to approach its adoption progressively. There may be a number of alternative tactics to induce an incremental adoption of a radical innovation. Services and technological products such as software are conceivable as bundles of features that can be often changed one at a time. Introducing the target feature configuration by progressively altering the starting one may be more effective that proposing it disruptively, because the former path allows consumer to gradually adjust to the aggregate variation. However, the finding that actual ownership is not necessary to induce adaptation to the intermediates suggests also another class of strategies. Whenever managers anticipate that present endowments will hinder the adoption of a new product, this should be promoted by stressing its similarities with such endowments. A perception of "closeness" should help consumers to get acquainted with the idiosyncrasies of the new product that are initially recognized. In turn, the anticipatory adaptation to this product idea should foster the acceptance of its remaining innovativeness.

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