When Less Is More: Consumer Aversion to Waste

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The present research investigates consumer aversion to waste. We propose that forward-looking anticipation of waste will influence consumer response in a variety of settings. We demonstrate that aversion to waste 1) arises from unused utility in a product offering, (2) causes consumers to forfeit desired utility, (3) exerts unequal influence on consumers depending on whether the purchase involves a good or a service, and (4) has important implications for inter-firm competition and consumers’ own risk-seeking behavior.

[to cite]:

[url]:
http://www.acrwebsite.org/volumes/13561/volumes/v35/NA-35

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SESSION OVERVIEW

Most consumer choice research does not distinguish between options that provide single-time consumption versus a stream of consumption. Many real-life choices, ranging from durable products (furniture, appliances) to more frivolous ones (CDs, vacations) provide consumers with a stream of consumption utility that can last from a few days to a few years. In a seminal paper on the topic, Prelec and Loewenstein (1998) have shown the importance of understanding consumption as a stream of utility to better predict consumer choice and payment preferences. Conceptually, evaluation and preference for such products are influenced by expectation of use and value of the product on the multiple future consumption occasions. This raises several interesting questions that have been under-researched in the literature. If people are forward-looking when it comes to extended consumption is their choice influenced by, for example, value of time now and in the future? How do consumers approach decisions that involve long-term vs. short-term consumption (e.g., buying vs. renting)? How does the expectation of leftover unused utility affect preferences? The topics examined in this session bridge research on time consumption and emerging research in the domain of extended consumption to better understand consumer decision making.

The papers in this session study three important research questions. First, Okada examines how people value time in the present and in the future. This paper shows that consumers’ predictions of use and value of time in the future are ambiguous and hence lead to larger discrepancies in WTP and WTA for future as compared to current consumption of time. Next, Bolton and Alba examine consumption of products and the effects of unused utility or waste on consumer decision making. In a series of studies the authors find that consumers are less likely to accept and are less satisfied with products if they anticipate unused utility. This forward-looking waste aversion has consequences for bundling and competition among goods and services. Finally, Pochepstova et al. compare the consequence of different consumer decision strategies for renting vs. buying products with a flexible stream of consumption. This paper shows that long-term use of a product leads to different decision mindset as compared to a temporary use of a product. As a result consumers choose to rent a product that they would not purchase, even when the purchase price is equivalent to the rental price.

All three papers in this session include multiple empirical studies. Taken together, the papers examine how predictions about time, use (and non-use), and value over time can systematically impact consumers’ preferences and choices. In addition, Drazen Prelec, an eminent researcher in the area of intertemporal choice, will serve as the session’s discussant and will synthesize the contributions of the papers into a cohesive framework for understanding the dynamics of consumer choice in the domain of extended consumption.

Recent trend in consumer behavior research has been shifting attention towards a more comprehensive view of consumer decision making that involves multiple choices and consumption episodes (e.g., Dhar and Simonson 1999, Khan and Dhar 2006). This session contributes to this growing body of research and is expected to attract audience interest at the conference.

EXTENDED ABSTRACTS

“The Value of Time in the Future and Present”
Erica Mina Okada, University of Hawaii

Money is more valuable in the present than in the future, but we propose that with time the relative value in the future versus the present is more ambiguous. On the one hand, based on the theories of asymmetric discounting of positive and negative outcomes (Mowen & Mowen 1991) and temporal construal theory (Liberman & Trope 1998), we propound that people are generally optimistic and expect the future to be better than the present. Therefore, people put a higher opportunity cost on their time in the future than their time now. But on the other hand, the resource slack theory (Zauberman & Lynch 2005) also suggests that people expect time to be more abundant in the future than in the present. The value of time in the future is therefore more ambiguous than time now. Time would be more valuable in the future if one considered its higher opportunity cost in the future versus the present. However, time would be more valuable in the present if one considered its relative scarcity in the present versus the future. We study the effect of this relative ambiguity of future time on two types of choice patterns.

Buying and Selling Time in the Future versus Present. A seller’s willingness to accept (WTA) for an item is generally higher than a buyer’s willingness to pay (WTP), and this WTA – WTP discrepancy can be explained in part as a manifestation of conservatism on the part of both buyers and sellers in evaluating the uncertain outcomes of a prospective exchange (Okada 2006). The true value of an item to an individual: i.e. how much s/he will actually like and use it, availability of better alternatives in the future, etc., is inherently uncertain. Therefore, buyers and sellers both face uncertainties about whether they will become better off or worse off as a result of exchange. To be conservative, buyers focus more on scenarios where they become worse off for purchasing an item that ends up being low value, and are willing to pay only a relatively low price. Sellers focus more on scenarios where they become worse off for parting with an item that would have been high value, and are willing to accept only a relatively high price. The magnitude of the WTA – WTP discrepancy should therefore become greater when there is a higher level of uncertainty about the item’s value.

The WTA – WTP discrepancy has been shown in the exchange of time. For example, a homeowner may mow his own lawn instead of paying his neighbor’s son $20 to do the job, though he would never mow someone else’s lawn for $20 (Thaler 1980). The value of time is more ambiguous than the value of money (Okada & Hoch 2004), and we present that the value of future time is even more ambiguous than the value of time now. Therefore, the WTA – WTP discrepancy should be greater when buying and selling time in the future compared to the present.

An experimental study involving 182 participants demonstrated that people were willing to do three hours of data entry work today in exchange for $30.98 on average, but were willing to pay only $21.39 to someone else to get the same task done, replicating previous studies. When the same three hours of data entry work had to be done not today, but in one week, the WTA – WTP discrepancy further widened: people were willing to accept on average $40.02,
but were willing to pay only $19.93. Even though it would presumably be more convenient to schedule something one week in advance rather than the same day, three hours of time was valued higher in the future than the present, especially as measured as WTA. In a further study with 175 participants we ruled out alternative explanations, such as dread, for the increase in the WTA–WTP discrepancy from the present to the future. We also directly measured people’s opportunity costs of future time versus present time, and the extent to which they perceived time to be more abundant/scarc in the future versus the present, to corroborate our theory.

**Expediting versus Postponing.** The value of time in the future is more ambiguous than the value of time in the present. Time in the future would be more valuable if one considered the relatively higher opportunity cost of time in the future versus the present. However, time in the present would be more valuable if one considered its relative scarcity in the present. In a study involving 175 participants, we varied the context in which participants made intertemporal choices, so that either the relative opportunity cost, or the relative abundance/scarcity of time, was made more salient.

When a prospective task is firm and binding, the trade-off between spending present time versus future time becomes more explicit, and the relative opportunity cost becomes more salient. If they must expend a given unit of time, people would rather save their time in the future, which is of the greater value, and they should expedite. In contrast, when the task is more flexible and less binding, people may be less likely to spend time now when they are busy, and prefer to postpone when they expect to have more of it in the future. After accounting for alternative explanations based on the feasibility, difficulty, or enjoyability of a given task when performed now versus in the future, our study demonstrated that people tended to expedite a given task when it was required, and postpone when the same task was optional.

**“When Less is More: Consumer Aversion to Waste”**

Lisa E. Bolton, University of Pennsylvania
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The present research investigates how forward-looking anticipation of waste affects consumer response. For example: consumers will pay significant amounts of money to attend concerts by new artists yet buying and listening to CDs only once is deemed wasteful; buying and reading magazines once is accepted practice whereas buying socks and wearing them once is not; for the same price, renting DVDs seems more responsible than subscribing to premium TV in order to watch three television series. Although alternative explanations likely abound, one common thread runs through each of these scenarios: waste aversion is a constraint on consumers’ pursuit of utility. We contend that waste aversion—a phenomenon that is largely independent of vendor behavior—exerts a significant, seductive, but largely obscure influence on consumer decision making

Aversion to waste is a matter of common, perhaps universal, experience. “Waste, not want not” is an intuitively appealing heuristic that serves us well when resources are constrained. Yet waste aversion has been virtually ignored as a subject of scientific inquiry. The primary exception has been the work of Arkes, who first broached waste as an explanation for the sunk-cost bias (Arkes and Blumer 1985; see also Arkes 1996). According to this formulation, people persist in a losing endeavor because abandonment would imply that prior investments in the endeavor have been wasted—a nice illustration of how an otherwise sensible rule can be overgeneralized to a potentially catastrophic extent. To our knowledge, extension of Arkes’s insightful observation has been rare and narrow in scope, taking place almost entirely within the context of product-replacement decisions (Cripps and Meyer 1994; Okada 2001, 2006).

Although compelling in its own right, we argue that prior research understates the biasing influence of waste aversion on consumer behavior. The present investigation departs from past research in several ways that speak to broader application. First, unlike the inherently retrospective effects of sunk costs, we argue that consumers forego future utility because they anticipate waste in their purchase, consumption, duplication, and disposal of potential purchases. Second, by not constraining the investigation to replacement, which requires only a judgment about optimal point of repurchase, we are able to investigate choice among competing options. Finally, and perhaps most important, we examine different determinants of waste, showing how alternatives that are comparable in utility can evoke very different purchase intentions.

In a series of studies, we find that consideration of waste affects consumer responses in a variety of consumption settings. We first demonstrate consumer aversion to waste when judging the behaviors of others—even when the purchase scenarios were otherwise designed to be equivalent in terms of utility and price. For example, even when both deliver equivalent enjoyment, paying to work out at a nice fitness club (where the remainder of the one-month membership will go unused) is deemed less intelligent than paying to attend a professional sporting event—because seller constraints (i.e., minimum purchase requirements) in the former case give rise to waste. These results pointed to unused utility as the fundamental driver of waste aversion. Nonetheless, study 1 demonstrates that consumers’ own forward-looking purchase intentions are especially sensitive to waste aversion for goods versus services. For example, participants are more likely to purchase a service than a good, when a past purchase leads to duplication. Studies 2 and 3 further demonstrate the effects of tangibility. In study 2, we demonstrate how tangible waste affects competition among goods and services, this time operationalized in terms of buying versus renting. In study 3, we demonstrate how consumer aversion to waste drives riskier choice when tangible goods “live on” and cue waste considerations. Throughout these studies, we rule out alternative explanations and provide evidence (e.g., cognitive response data, waste ratings) that waste considerations play a mediating role.

A better understanding of the role played by waste in consumer response to product offerings is important for several reasons. Fundamentally, waste aversion is another example of the limitations of value-based pricing: consumer preference for a higher-value option is reduced when the option entails unused utility. Moreover, waste can shift preference among goods and services. For example, consumers may prefer a service over a good when the good entails unused utility—even when both offer equivalent utility. Service providers may be less vulnerable to waste aversion and therefore more able to charge a price commensurate with an offering’s utility. This result provides further evidence that goods and service providers (including renters) have differential competitive (dis)advantage in the marketplace (cf. Bolton, Warlop, and Alba 2003; Bolton and Alba 2006). Finally, our discussion focuses on three areas that merit further investigation: bundling, purchase versus consumption, and waste mitigation. The lesson for marketers? Finding ways to help consumers avoid waste can provide competitive advantage in the marketplace. Less is, indeed, more—when more entails waste.
“Consumer Decisions to Rent vs. Buy”

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Everyday we encounter choice options that provide extended streams of consumption. In consumer product domain we choose between buying vs. renting DVD players or tuxedos, in the domain of social relationships we choose between romantic partners for immediate enjoyment vs. long-term relationship. The outcome of these decisions is usually multiply determined by various factors including differences in cost, estimation of future use (and hence potential waste), and self-control considerations (for example, in the case of flat-fee vs. pay-as-you-go services).

We propose that there is a difference in mindsets that consumers adopt when making a decision that involves short-term versus long-term consumption. Consistent with this view research on relationships shows that people use different approaches when selecting long-term versus short-term partners, being more stringent when evaluating potential long-term prospects (Stewart et al. 2000). We argue that consumers think about the rental choice and purchase choice in different ways as consumers naturally match their decision strategy to the choice situation (Tversky et al. 1988). Buying decision (extended consumption) is seen as more permanent and nonreversible and thus, encourages consumer to adopt a more critical decision mindset. Therefore products are evaluated more carefully before making a purchase. In contrast, renting (short-time consumption) is seen as temporary and reversible decision and hence acceptable decision strategy is less extensive and thorough. As a result more products pass the acceptance threshold. Although such different strategies are frequently justified by higher prices for purchase than for rental, we show that they are applied even when the options are equally priced. Under these conditions an over application of higher acceptance threshold to purchases (compared to rentals) potentially leads to suboptimal choices. We predict that consumers will exercise more control over their purchases than rentals. This leads to lower purchase likelihood of long-term use products as compared to a short-term rental of the same products.

In a series of studies we provide empirical evidence that consumers choose to rent a product that they would not purchase, even when the purchase price is equivalent to the rental price. Similar to duration neglect found in the domain of extended affective experiences (e.g. Fredrickson & Kahneman 1993), we show that extended consumption provided by purchase option does not increase the purchase likelihood of a product. In study 1 we examined the preference for rent and buy by looking at hypothetical decisions made by college students imagining spending a semester at another university. The respondents were shown a single product (e.g., a fridge) and were assigned to either rent/no-rent condition or a buy/no-buy condition. Consistent with our predictions, the participants were more likely to rent than to purchase the option provided even though the rental price for one semester was the same as the purchase price. The results were replicated in a second product category.

The second study extended the results by ruling out alternative explanations. One alternative explanation for the results of study 1 is perceived hassle of product disposal after a short-term use. In study 2 we use a different product (movie DVD) which is unlikely to create a similar disposal problem. Another alternative explanation posits that given the same price a purchase may be perceived as inferior to a rental option. To rule out this explanation we pre-tested the movie DVDs and found not difference in the perceived quality for both purchase and rental offerings. Furthermore, in this study we explore a boundary condition of our effect, a situation where a product is available for either purchase or rent for the same price (within-subjects condition). Consistent with previous literature (Ariely & Loewenstein 2000), we predict that “within-subjects condition” will increase the attention that participant pay to the duration of consumption and hence more participants would prefer purchase over rent. As predicted, we found that more people preferred to rent than to purchase in the between-subjects conditions, however, the reverse was true for within-subjects condition.

The next set of studies examined the underlying process of renting and buying decisions. In study 3 we used an optional stopping paradigm (Rapoport et al. 1972) and predicted that participants in the buying condition would be more thorough in their information search and evaluation of alternatives. Consistent with our theory, we found that while evaluating different movie DVDs sequentially, the participants in the rental condition stopped on average two movie titles earlier than did the participants in the purchase condition. This indicates a less stringent decision strategy as compared to purchase decision. To further examine higher acceptance threshold for buying we used an unavailable option paradigm (Farquhar & Pratkanis 1993). Study 4 examined whether participants were willing to accept another product (a second best alternative) when their first choice was not available. We found that when the current preferred option was not available for purchase the participants were more likely to accept the second best choice for rental, but not for purchase.

The four studies have shown that participants facing a purchase (long-term use) decision are more stringent in the evaluation process and are less likely to purchase a product. Study 5 attempts to improve the likelihood of buying by priming the “spending” concept to the participants. Since the decision to rent is relatively easy and people are less frugal with their rental decisions, priming spending would have a more pronounced effect on a decision to buy than on a decision to rent. The goal of this study was to make rental and purchase decisions more comparable in consumers’ mind. In this study we used a 2 (prime: spending vs. control) x 2 (mode: rent vs. purchase) between-subjects design. We find that priming spending increased the likelihood of buying, but did not affect renting. As a result, decreasing stinginess made purchase decision more similar to rental decision.

REFERENCES


