

Consumer Choice between Hedonic and Utilitarian Goods¹

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ABSTRACT

This article examines how consumer choice between hedonic and utilitarian goods is influenced by the nature of the decision task. Building on research on elaboration, we propose that the relative salience of hedonic dimensions is greater when consumers decide which of several items to give up (forfeiture choices) than when they decide which item to acquire (acquisition choices). The resulting hypothesis that a hedonic item is relatively more preferred over the same utilitarian item in forfeiture choices than in acquisition choices was supported in two choice experiments. In a subsequent experiment, these findings were extended to hypothetical choices where the acquisition and forfeiture conditions were created by manipulating initial attribute-level reference states instead of ownership. Finally, consistent with our experimental findings, a field survey showed that owners of relatively hedonic cars value their vehicles higher relative to market prices than owners of relatively utilitarian cars. We discuss theoretical implications of these reference-dependent preference asymmetries and explore consequences for marketing managers and other decision makers.

(hedonic and utilitarian choice, reference dependence, loss aversion)

Consumer choices are driven by utilitarian and hedonic considerations. Consumers choosing among new automobiles, for example, may care about utilitarian features (e.g., gas mileage) as well as about hedonic attributes (e.g., sporty design). Research suggests that these different considerations map onto independent components of product evaluations and attitudes and allow us to distinguish between goods according to their relative hedonic or utilitarian nature (Batra and Ahtola 1990; Mano and Oliver 1993). Broadly speaking, hedonic goods provide for more experiential consumption, fun, pleasure, and excitement (designer clothes, sports cars, luxury watches, etc.), while utilitarian goods are primarily instrumental and functional (microwaves, minivans, personal computers, etc.; Hirschman and Holbrook 1982; Strahilevitz and Myers 1998). If consumers make choices between goods or characteristics with such different appeal, an account of consumer behavior needs to address the manner in which they make these fundamental tradeoffs.

This paper examines consumer choice between two goods, one of which is seen as superior on a hedonic dimension and the other is seen as superior on a utilitarian dimension. We compare preferences for these goods in an acquisition condition, in which the consumer chooses which of the two to acquire, and in a forfeiture condition, in which the consumer chooses which of the same two items to give up. Based on the literature on the effect of elaboration on message evaluation (e.g., Tybout and Artz 1994), we propose that greater spontaneous elaboration in forfeiture choices increases the impact of hedonic aspects in overall evaluation. As a result, relative preferences for hedonic vis-à-vis the same utilitarian goods will be stronger in forfeiture than in acquisition choices. Consistent with our underlying theory, we show that the predicted asymmetry can be attenuated using a thought-listing task that suppresses the differential elaboration on the hedonic and utilitarian dimensions.

We further propose that even in the absence of actual possession a choice can be framed as a forfeiture or as an acquisition decision based on the attribute levels that characterize a reference option. Consider, for example, someone who is debating between two apartments. One has a nicer view (a relatively hedonic feature) but the other provides a shorter commute to work (a relatively utilitarian feature). If the person's current apartment has a nice view and a short commute, the choice will be

viewed as a forfeiture decision — a tradeoff between a loss of quality of view and a loss of commuting convenience. In contrast, if the current apartment has a poor view and a long commute, the choice appears as an acquisition decision — a tradeoff between a gain in quality of view and a gain in commuting convenience. We propose an increase in the relative preference for the apartment that is superior on the hedonic dimension when the decision is viewed as forfeiting a benefit rather than acquiring a benefit. We show that this asymmetry in preferences due to the manipulation of the reference option can also be expressed in terms of differential loss aversion for hedonic and utilitarian attributes (cf. Tversky and Kahneman 1991).

The remainder of the paper is organized as follows. A brief review of prior research relevant to reference effects and the role of elaboration in decision making leads to our prediction of asymmetric preferences for hedonic and utilitarian products in forfeiture and acquisition choices. Next, we test this prediction in three experiments, involving real and hypothetical choices. As illustrated in the apartment example, we use simple manipulations that determine whether the hedonic-utilitarian tradeoffs involve forfeiting or acquiring benefits. We then illustrate marketplace implications of the experimental results in a field survey with used car data. We conclude with a discussion of the theoretical and managerial implications of our findings for pricing, promotion, and product modification strategies, suggesting that relative market shares for hedonic vis-à-vis utilitarian products may depend on the frame of reference used to evaluate these products.

PREFERENCE FOR HEDONIC AND UTILITARIAN GOODS IN ACQUISITION VERSUS FORFEITURE DECISIONS

While the consumption of many goods involves both dimensions to varying degrees (Batra and Ahtola 1990), there is little doubt that consumers characterize some products as primarily hedonic and others as primarily utilitarian. We define hedonic goods as ones whose consumption is primarily characterized by an affective and sensory experience of aesthetic or sensual pleasure, fantasy, and fun (Hirschman and Holbrook 1982). Utilitarian goods are ones whose consumption is more cognitively driven, instrumental, and goal-oriented and accomplishes a functional or practical task (Strahilevitz and Myers 1998). Similar to these findings on perceived product characteristics, recent work by Bazerman,

Tenbrunsel, and Wade-Benzoni (1998) suggests that one can distinguish between affective preferences ("wants") and cognitive or reasoned preferences ("shoulds") that underlie consumer choice (cf. Shiv and Fedorikhin 1999; Wertenbroch 1998).² The want-should distinction is broadly compatible with the distinction between hedonic and utilitarian goods — items that are high on hedonic value are likely to be subject to "want" preferences and items that are high on utilitarian value are likely to be subject to "should" preferences. What has not previously been examined, however, is whether evaluations of hedonic and utilitarian dimensions and consequently the tradeoffs between them are systematically affected by the choice task.

Our focus on differences between acquisition and forfeiture choices is motivated by the research on loss aversion that demonstrates an asymmetry in evaluations depending upon the direction of the proposed trade, that is, whether a good is being acquired or forfeited relative to the consumer's present state (Kahneman, Knetsch, and Thaler 1990; Tversky and Kahneman 1991). The conclusion from this body of work is that an item is generally valued more when it is part of one's endowment than when it is not. However, to the extent that both a hedonic and a utilitarian item are valued more when they are forfeited than when they are acquired, the concept of loss aversion by itself does not provide any insight into relative assessments. Because acquisition and forfeiture choices potentially involve different decision processes, we rely on the compatibility principle that suggests that the evaluation of stimulus components may depend on the particular evaluation task, affecting the decision maker's relative preferences among the options (Shafir 1993; Tversky, Sattath, and Slovic 1988).

Previous research suggests why tradeoffs between hedonic and utilitarian dimensions will depend on the task. For example, a choice (as opposed to rating) task generally favors the option that is higher on the utilitarian dimension. Tversky and Griffin (1991; Shafir, Simonson, and Tversky 1993) propose that decision makers search for reasons and arguments to justify their choices. Similarly, Tversky et al. (1988) show that alternatives that provide decision makers with compelling and justifiable arguments are more likely to be preferred in choice tasks. In line with this view, Böhm and Pfister

² Wertenbroch (1998) distinguishes between 'vice' and 'virtue' goods, providing a formal conceptualization of

(1996) show that contexts that foster justification enhance preferences for utilitarian features. Recently, Bazerman et al. (1998) have suggested that choice forces decision makers to focus on “should” preferences so that they are more likely to favor more utilitarian options. In sum, choice tasks enhance the relative salience of utilitarian consequences in overall evaluation in both acquisition and forfeiture.

Yet because acquisition and forfeiture choices represent different choice tasks, the evaluation of each stimulus will also depend on differences in how consumers process these tasks. We propose that forfeiture choices stimulate more spontaneous elaboration than acquisition choices and suggest two reasons for this differential elaboration. First, it is likely that the more time a consumer has to examine and interact with the object in the forfeiture condition, the more she will tend to elaborate on the object's potential benefits (cf. Strahilevitz and Loewenstein 1998). Yet, although the extent to which consumers engage in elaboration depends on the time or resources available, it is unlikely to be the sole cause of differential elaboration. A second argument for greater elaboration in the forfeiture condition builds on the literature on counterfactual thinking. Counterfactuals are mental representations of alternative realities compared to those actually obtained. Research distinguishes between comparisons of actual outcomes to more preferred alternatives (i.e., upward counterfactuals) and comparisons to less preferred alternatives (i.e., downward counterfactuals) and suggests that upward counterfactuals are *spontaneously* generated more frequently than downward counterfactuals (Roese and Olson 1997).³ Recent research has extended these ideas to *prefactual* thinking, i.e., the imagination of alternative possible outcomes prior to choice (Sanna 1996). These findings suggest that consumers are more likely to spontaneously elaborate on alternative future outcomes when they have to forfeit an item (i.e., an upward prefactual) than when they acquire an item (i.e., a downward prefactual). For example, someone who has so far been enjoying a nice view and a short commute to work from his apartment but now has to forgo one of these two features in deciding between two new apartments is more likely to imagine what it is like not

goods that are subject to impulsive preferences.

³ One reason for this asymmetry in counterfactual thinking is that the negative affect associated with worse outcomes is more likely to trigger the imagination of (better) alternatives to reality (Kahneman and Miller 1986; Roese 1997). A second, adaptive reason is that people who experience negative or unpleasant outcomes are more likely to focus on actions that could have been taken to avoid these outcomes (Lewin 1935; Roese 1997).

to have the view and the commute and contrast this with his old apartment than someone who has not possessed these features in the past and is about to acquire one of them. In sum, we propose greater elaboration in forfeiture choices.

We also propose that the presence of such differential spontaneous elaboration in the forfeiture choice condition enhances the relative valuation of hedonic attributes. This is based on two arguments. First, a well-documented finding in the literature is that elaboration on a positive stimulus message can enhance the favorableness of judgment (Tybout and Artz 1994). Thus, imagining the use of a superior, positively valued item should increase its attractiveness (see Shiv and Huber 1999; Strahilevitz and Loewenstein 1998). In particular, elaboration increases the influence of more easily imaginable attributes on product evaluations, making them more salient (Keller and McGill 1994; Sherman, Cialdini, Schwartzman, and Reynolds 1985; Shiv and Huber 1999). To the extent that hedonic attributes are more sensory and imagery-evoking (MacInnis and Price 1987), the relative attractiveness of an item that is superior on the hedonic dimension should thus be enhanced. A second reason is that upward prefactual thinking induces negative emotions since one is about to be worse off than before (Roese 1997; Sanna 1999). To the extent that forfeiture choices spontaneously trigger upward comparisons that highlight (negative) affective consequences, respondents may be motivated to minimize the anticipated negative emotions by retaining the more hedonic good. Figure 1 summarizes the proposed process, by which differential elaboration influences the relative salience of hedonic and utilitarian attributes.

[Insert Figure 1 about here]

This leads to the following hypothesis about choices between hedonic and utilitarian goods. Consider having to choose one of two options neither of which you currently own, or alternatively, having to forfeit one of two options both of which you currently own. Although the two decisions are logically equivalent (i.e., the choice sets are identical), we predict that hedonic attributes will be weighed more heavily in relative terms when one is deciding which one of two options to give up as opposed to which one of two options to acquire. We now test this hypothesis in three experiments and a field survey. The first two experiments show how relative preferences for hedonic and utilitarian goods can

be changed as a result of whether subjects choose which of them to acquire or which of them to forfeit. Experiment 2 also examines the role of elaboration in the relative assessment of hedonic and utilitarian goods. Experiment 3 shows that our predictions for ownership-dependent acquisition and forfeiture choices also apply to reference dependence in the absence of actual possession. Finally, the field survey shows that owners of relatively hedonic cars value their vehicles higher relative to market prices than owners of relatively utilitarian cars.

EXPERIMENT 1: FORFEITURE VERSUS ACQUISITION CHOICE BETWEEN HEDONIC AND UTILITARIAN GOODS

Method

Fifty-one undergraduate and graduate students at a private mid-western university were recruited for this experiment with flyers posted around the campus. The stimuli were two gift certificates with a \$7 face value, one for an audio tape [or as partial payment for a compact disk (CD)] of the subjects' choice at a nearby local record store, the other for a 10-pack of brand name diskettes at the nearby university book store. These stores were chosen to equalize transaction costs.

The between-subjects experimental design consisted of an acquisition condition and a forfeiture condition. Subjects were randomly assigned to one of the two conditions. The dependent variable was subjects' choices of each of the gift certificates. Subjects in both conditions were shown the two certificates when they entered the laboratory. In the acquisition condition, they were told that they would first have to fill out a series of questionnaires and could then choose one of the certificates as compensation. In contrast, subjects in the forfeiture condition were told at the outset that they could keep both certificates as compensation. When they had completed the (unrelated) questionnaires, the experimenter asked subjects in the acquisition condition to choose one of the certificates. In contrast, she informed subjects in the forfeiture condition that there had been a procedural error when she had given away both gift certificates and therefore kindly asked them to return one certificate. After recording subjects' choices, the experimenter debriefed them about the purpose of the experiment and gave them back the gift certificate, which they had just returned. Thus, subjects in the acquisition condition received one \$7 certificate, while subjects in the forfeiture condition ultimately received a total of \$14

worth of certificates.

Results and Discussion

Pretest. We chose the two gift certificates as stimuli based on the results of two pretests. In the first pretest, which we adopted from Strahilevitz and Myers (1998), subjects from the same population categorized a number of everyday consumer goods as *primarily utilitarian* (defined as “useful, practical, functional, something that helps you achieve a goal, e.g., a vacuum cleaner”), as *primarily hedonic* (defined as “pleasant and fun, something that is enjoyable and appeals to your senses, e.g., perfume”), as *both utilitarian and hedonic*, or as *neither*. A large majority of subjects classified music audio tapes and CDs as primarily hedonic (17 out of 22 subjects, $\chi^2=6.55, p<.02$) and computer diskettes as primarily utilitarian (18 out of 22 subjects, $\chi^2=8.91, p<.01$). A second pretest showed that the gift certificates for these two kinds of items were seen as equally attractive.

Experiment. We predicted that the relative preference for the more hedonic item over the utilitarian item would be greater in the forfeiture condition. In support of this hypothesis, subjects were significantly more likely to give up the diskette certificate (and hence to prefer the music certificate) when they were faced with a decision of which item to forfeit than they were to select the music certificate when they were faced with a decision of which item to acquire. Eighty-four percent of the subjects (21 out of 25 subjects) preferred the music certificate in the forfeiture condition compared to 54 percent (14 out of 26 subjects) in the acquisition condition ($\chi^2=5.382, p=.02$). This suggests that the relative evaluation of the hedonic characteristics of goods is more favorable in choice when the options represent potential losses than when they represent potential gains.

EXPERIMENT 2: SUPPRESSING DIFFERENTIAL ELABORATION IN FORFEITURE AND ACQUISITION CHOICES BETWEEN HEDONIC AND UTILITARIAN GOODS

Experiment 1 demonstrated the predicted interaction between type of good and decision task. The purpose of the next experiment is three-fold. First, we want to replicate the results of Experiment 1 with different products to show the generality of the effect. Second, we want to rule out that the observed choice patterns arise from a difference in consumers’ uncertainty in their evaluations of hedonic and

utilitarian goods.⁴ For example, if consumers are more uncertain about the precise value of hedonic than of utilitarian goods, the decision may be seen as a choice between a sure (utilitarian) and an uncertain (hedonic) outcome. Risk aversion would then predict the pattern of preferences observed in Experiment 1. Since both goods were standard market goods, there is no a priori reason to believe that subjects associated greater uncertainty with the more hedonic good. To rule out this explanation empirically, we pretested the stimuli by measuring subjects' uncertainty about their monetary valuations of the stimuli (Nowlis and Simonson 1997).

Third, and most importantly, Experiment 2 uses a thought-listing task to examine whether the increased preference for the hedonic good in forfeiture choices results from greater spontaneous elaboration on the hedonic object. Based on previous research, we suggest that requiring subjects to list reasons for their choices should diminish this effect for two reasons. First, if spontaneous elaboration focuses decision makers on affective consequences, listing reasons should de-emphasize the hedonic relative to the utilitarian focus of subjects' evaluations. General evaluations of attitude objects reflect more utilitarian components when subjects think about reasons for their attitudes (Böhm and Pfister 1996; Millar and Tesser 1986; Wilson, Lisle, Schooler, Hodges, Klaaren, and LaFleur 1993). Second, to the extent that spontaneous elaboration favors the hedonic good as it is easier to imagine or elaborate upon (see Keller and McGill 1994; MacInnis and Price 1987), a task that forces elaboration on *both* items should suppress differential elaboration. Thus, the difference in subjects' preferences between hedonic and utilitarian goods in the acquisition and forfeiture choices should decrease when they list reasons before choosing compared to when they do not.

Method

One hundred fourteen undergraduate students from a private northeastern university were recruited in their college dormitories. Subjects were run in small batches of several individuals. In return for their participation in an unrelated questionnaire study, they were offered a large pack of *M&M* chocolate candies and a *UHU* glue stick, each with a retail value of approximately \$1.25.

⁴ Bateman, Munro, Rhodes, Starmer, and Sugden (1997), for example, find marginally greater reference

The study design was a 2×2 between-subjects full factorial. Similar to Experiment 1, the first factor manipulated whether subjects decided between the alternatives in a forfeiture or acquisition condition. In the acquisition condition, subjects were first shown the two items and were told that they would have to choose one of them as compensation at the end of the study. Next, they filled out the unrelated questionnaire and then made their choice. In the forfeiture condition, subjects were given both items at the beginning of the procedure and were told that these were theirs to keep as compensation for their participation. Upon completion of the questionnaire, the experimenter informed these subjects that there had been a procedural error and kindly asked them to return one of the items. To prevent subjects in the forfeiture condition from feeling misled to expect to receive two items, they were told that they would later be provided with a consolation item. After recording each subject's decision which item to forgo, the experimenter debriefed subjects and gave back the forfeited item. The second factor was intended to suppress differential spontaneous elaboration in the forfeiture condition. Specifically, subjects were asked to write down reasons for why they would like to own *M&Ms* and glue sticks. Subjects in the control group received no such instructions. Subjects were randomly assigned to the four conditions.

Results and Discussion

Pretests. The stimuli had been selected based on the results of two pretests with samples from the same subject population. The first pretest was the same as the one used in designing the stimuli for Experiment 1 and showed that a large majority of subjects regarded *M&Ms* as primarily hedonic (40 out of 46 subjects, $\chi^2=25.13, p<.001$) and *UHU* glue sticks as primarily utilitarian (34 out of 46 subjects, $\chi^2=10.52, p<.001$). In the second pretest, subjects stated their willingness to pay for a pack of *M&Ms* ($M=\$0.83$) and for a *UHU* glue stick ($M=\$1.27; t(31)=-3.70, p<.001$, two-sided) and rated how confident they were in these valuations of the two items. Subjects showed greater confidence in their ability to evaluate *M&Ms* ($M=6.59$ on a 9-point scale) compared to *UHU* glue sticks ($M=5.72$;

dependence for rarely bought, harder-to-evaluate chocolates than for frequently bought soft drinks.

$t(31)=1.98, p<.06$, two-sided). Thus, greater relative preference for *M&Ms* in forfeiture choices cannot be explained by greater uncertainty in evaluating *M&Ms* compared to a glue stick.

Experiment. We predicted a relative increase in the preference for the hedonic item in the forfeiture condition. The results are reported in Table 1. Across the two without-reasons conditions, subjects showed a relatively stronger preference for the hedonic good in forfeiture choice. The *M&Ms* were preferred by 85 percent of the subjects (22 out of 26) in the forfeiture condition and by 50 percent of the subjects (15 out of 30) in the acquisition condition. This replicated the finding in Experiment 1. We further predicted that the asymmetry in preferences between forfeiture and acquisition would be attenuated if subjects first provided reasons for their preferences. Consistent with this prediction, 62 percent of the subjects (18 out of 29) preferred the *M&Ms* in the forfeiture condition compared to 55 percent (16 out of 29) in the acquisition condition. We used a logit model to conduct an overall test of the main and interaction effects. The dependent variable was a 0-1 dummy variable where ‘1’ denoted preference for the *M&Ms*. The independent variables were as follows: (1) a dummy variable for task (1=acquisition), (2) a dummy variable for the reasons manipulation (1=reasons listing), and (3) the interaction of these two main effects. Consistent with the hypotheses, the coefficient for task was significant ($\beta_{\text{TASK}} = -.50, p<.01$) as was the coefficient for the interaction ($\beta_{\text{TASK}\times\text{REASONS}} = .36, p<.10$). This result provides additional evidence that hedonic characteristics loom larger in forfeiture choices. When subjects engaged in an activity that reduced the hypothesized difference in elaboration on the two goods, e.g., listing reasons for owning both items, the choice differential was considerably smaller.

[Insert Table 1 about here]

If, as we have suggested, the increased evaluation of hedonic characteristics is due to differential elaboration in the forfeiture condition, then the imagined impact of forfeiting a hedonic item should be greater than the imagined impact of forfeiting an equivalent utilitarian item. Thus, in a brief follow-up study, we directly compared the imagined impact of forfeiting a hedonic and an equally attractive utilitarian good by having subjects evaluate hypothetical outcomes. This approach is similar to previous research on evaluations of imagined outcomes (e.g., Kahneman and Miller 1986; Schkade and

Kahneman 1998). We used ratings instead of choice to reinforce the central finding from Experiments 1 and 2 with a different evaluation mode. Since the objects in each of the two item pairs in these experiments had been shown to be equally attractive in acquisition choices, we focused on the imagined impact of forfeiture only.

In a within-subjects design, subjects evaluated the loss experienced by two hypothetical consumers, 'A' and 'B', one of whom was described as having lost the more hedonic of two previously owned goods, while the other was described as having lost the more utilitarian of the same two goods.⁵ In one scenario, they had each won the two \$7 gift certificates described in Experiment 1 (i.e., one for an audio tape / CD of the individual's choice, the other for a 10-pack of diskettes). 'A' had subsequently lost the music certificate but not the diskette certificate, while 'B' had lost the diskette certificate but not the music certificate. In another scenario, 'A' and 'B' had each won a small bag of *M&Ms* and a *UHU* glue stick. 'A' had subsequently lost the *M&Ms* but not the glue stick, while 'B' had lost the glue stick but not the *M&Ms*. Note that these scenarios paralleled the forfeiture conditions in Experiments 1 and 2, except that forfeiture resulted from a loss in circumstances beyond the target individual's control (theft or breakage) rather than from choice.

Sixty-seven subjects compared on 9-point rating scales (i) which of the target individuals felt worse and (ii) which missed the lost prize more (1="A who lost the music certificate/*M&Ms*", 9="B who lost the diskette certificate/glue stick"). Subjects predicted that the target person who lost the hedonic music certificate would feel worse ($t=-6.17, p<.0001$) and miss the item more ($t=-9.16, p<.0001$) than the person who lost the utilitarian diskette certificate. Similarly, subjects predicted that the person who lost the hedonic *M&Ms* would feel worse ($t=-3.18, p<.01$) and miss the item more ($t=-2.47, p<.05$) than the person who lost the utilitarian glue stick. These results cannot be explained by greater overall preferences for the *M&Ms* or the music certificate, because the two utilitarian items were evaluated at least as high as the corresponding hedonic items in the pretests. Instead, hedonic characteristics become more salient when imagining the impact of forfeiture independent of choice.

⁵ Similar results were obtained using a between-subjects design.

EXPERIMENT 3: REFERENCE EFFECTS IN CHOICES BETWEEN HEDONIC AND UTILITARIAN GOODS

Experiments 1 and 2 created acquisition and forfeiture choices by manipulating actual ownership of a hedonic and a utilitarian good. Subjects either owned both and had to give one up, or they owned neither and had to choose one. We used this design to obtain externally valid findings for actual consumer goods of real monetary value. Recent research suggests that asymmetric valuations can also occur in the absence of physical possession (Sen and Johnson 1997; Tversky and Kahneman 1991). Specifically, when consumers are provided with a reference point, they may evaluate alternatives with respect to that reference point. Thus, a choice between the same two alternatives can be framed as a forfeiture or as an acquisition decision depending upon the attribute levels that characterize a reference alternative. Evidence of a shift in preference due to a manipulation of the reference option would extend the scope of our previous findings beyond the realm of ownership effects. We test this hypothesis using hypothetical choice problems between comparable alternatives that are described at the attribute level.

The asymmetry in preferences due to a reference point shift can be expressed in terms of relative loss aversion for hedonic and utilitarian attributes. Consider the four stimulus items in Figure 2. Choice option h is characterized by a high score in the hedonic attribute and a low score in the utilitarian attribute. Choice option f is characterized by the reverse scores. A superior reference item s has high scores in both attributes, and an inferior reference item i has low scores in both. When the consumer's reference item is s so that the decision is which of two superior attribute levels to forfeit, s /he has a relatively stronger preference for h over f (as shown by indifference curve U_s) than when the consumer's reference item is i (as illustrated by the steeper indifference curve U_i).

[Insert Figure 2 about here]

Our hypothesis implies that the ratio of the choice share of h to the choice share of f is greater in forfeiture choices. These ratios can be transformed into a coefficient λ_{hf} of relative loss aversion for hedonic and utilitarian goods as follows:

$$\frac{\Pr(h \phi_{sf})}{\Pr(f \phi_{sh})} \div \frac{\Pr(h \phi_{if})}{\Pr(f \phi_{ih})} = \frac{\Pr(h \phi_{sf})}{\Pr(h \phi_{if})} \div \frac{\Pr(f \phi_{sh})}{\Pr(f \phi_{ih})} = \lambda_h \div \lambda_f = \lambda_{hf}$$

where ϕ_s and ϕ_i denote strong preference, given a superior (*s*) or an inferior (*i*) reference item, and λ_h and λ_f are the parameters of loss aversion for *h* and *f* (cf. Tversky and Kahneman 1991). Our prediction of stronger preferences for the hedonic good when the reference item is superior implies that the relative loss aversion coefficient λ_{hf} is greater than 1. Since such differential loss aversion may be a function of attribute importance (Tversky and Kahneman 1991), we design choice problems such that the utilitarian attributes are at least as important as the hedonic attributes.

Method

Subjects were 141 undergraduate students at a private northeastern university. There were four choice problems (within subjects, in counterbalanced order), each with two reference item conditions (superior versus inferior; between subjects). The reference options were designed according to Figure 2 above. In each problem, subjects decided between two alternatives, one of which was superior in a utilitarian attribute (point *f* in Figure 2), while the other was superior in a hedonic attribute (point *h* in Figure 2), all else equal. An example is provided in the Appendix. The alternatives were as follows:

- apartments — utilitarian attribute: *distance to work* (“10 minutes” versus “45 minutes”); hedonic attribute: *view from the apartment* (“breathtaking view of sunset and city skyline” versus “view of a parking lot”),
- co-workers — utilitarian attribute: *reliability* (“very reliable” versus “not very reliable”); hedonic attribute: *fun to work with* (“a lot of fun” versus “somewhat arrogant”),
- college lunch plans — utilitarian attribute: *walking distance to cafeteria* (“5 minutes” versus “10 minutes”); hedonic attribute: *dessert menu* (“cookies, pastry, and fresh fruit for dessert” versus “no dessert”), and
- shampoos — utilitarian attribute: *cleansing efficacy* (“very effective cleansing agent” versus “moderately effective cleansing agent”); hedonic attribute: *softness of hair* (“hair feels soft and silky” versus “hair feels dry after shampooing”).

We had conducted a pretest to ensure that these pairs of attributes differed in their hedonic and utilitarian content and that the more hedonic attributes were not seen as more important than the

corresponding utilitarian attributes. Thirty-five subjects rated the relative hedonic and utilitarian content as well as the importance of each attribute used in the four problems. Using a measure adopted from Leclerc, Schmitt, and Dubé (1994), the hedonic ratings were anchored at 1="utilitarian" and 9="hedonic" where the terms utilitarian and hedonic were defined as in the pretests in Experiments 1 and 2, while the importance ratings were anchored at 1="not at all important" and 9="very important".

A brief cover story for each problem manipulated the reference item. In the superior reference item condition (equivalent to a forfeiture condition; point *s* in Figure 2), subjects were instructed to imagine themselves as currently consuming an alternative that was characterized by superior values in both attributes (e.g., a 10-minute drive to work and a beautiful view of the sunset from their current apartment). In contrast, in the inferior reference item condition (equivalent to an acquisition condition; point *i* in Figure 2), they were asked to imagine themselves as currently consuming an alternative that was characterized by inferior values in both attributes (e.g., a 45-minute drive to work and a view of a parking lot from their apartment). In both conditions, they were then told that they now had to switch to one of the two decision alternatives (e.g., because they had to move out of their current apartment). Subjects were randomly assigned to the two conditions. The dependent variable was subjects' choices.

Results and Discussion

Pretest. The pretest results supported our manipulation of the relative hedonic and utilitarian content and importance of the attributes. First, subjects distinguished clearly between hedonic and utilitarian attributes in all four cases. Distance to work was seen as a highly utilitarian attribute of apartments ($M=1.80$) while the view from an apartment was rated as highly hedonic ($M=7.86$; $t=-16.52$, $p<.0001$). Similarly, a co-worker's reliability was seen as utilitarian ($M=1.6$) while fun in working with a co-worker was seen as hedonic ($M=7.6$; $t=-14.71$, $p<.0001$). Distance to the cafeteria was a utilitarian attribute ($M=2.63$) while presence of the dessert menu was hedonic ($M=7.46$; $t=-8.32$, $p<.0001$). Lastly, a shampoo's cleansing efficacy was utilitarian ($M=2.23$) while the softness of one's hair was hedonic ($M=6.91$; $t=-9.67$, $p<.0001$).

Second, across attribute pairs, the attributes that were rated as relatively more hedonic were never

rated as more important than the corresponding utilitarian attributes. For apartments, distance to work ($M=6.82$) was rated as more important than the view ($M=6.06$; $t=2.05$, $p<.05$). For co-workers, reliability was rated as more important ($M=7.74$) than whether the co-worker was fun to work with ($M=6.17$; $t=4.28$, $p<.0001$). For lunch plans and shampoos there was no significant difference in attribute importance ratings (at $p<.20$). Thus, the pretest results rule out that the greater preference for the hedonic good in forfeiture choices is confounded with greater importance of hedonic attributes.

Experiment. We predicted a relative increase in preference for the hedonically superior alternative in the superior reference item condition compared to the inferior reference item condition. The individual choice shares are reported in Table 2 and are discussed here for the apartment problem. In the apartment problem, 64 percent of the subjects selected the apartment that had the better view over the apartment characterized by the shorter commute when the current apartment had a breathtaking view of the sunset and city skyline and was a 10-minute drive from work (superior reference item). In contrast, only 52 percent of the subjects chose that apartment when the existing apartment was described as overlooking a parking lot and being located 45 minutes from work (inferior reference item; $\lambda_{hf}=1.64$). As shown in Table 2, similar results were obtained across the four choice problems.

We used a logit model to conduct an overall test of this effect. The dependent variable was a 0-1 dummy variable where ‘1’ denoted preference for the item superior in the hedonic attribute. The independent variables were a dummy variable for reference item (1=superior) and three dummy variables for the individual choice problems. The results are presented in Table 3. As predicted, subjects were significantly more likely to choose the alternative that was superior in the hedonic attribute when the decision was made given a superior reference item than when it was made given an inferior reference item ($\beta_{\text{SUPERIOR REFERENCE ITEM}}=.70$, $p<.0001$).

[Insert Tables 2 and 3 about here]

This result lends further support to our hypothesis that hedonic consequences loom larger in forfeiture choices. Instead of inducing actual losses and gains of alternatives, this experiment induced acquisition and forfeiture frames by asking subjects to choose between two items that provided attribute-

wise improvements or decrements relative to a two-dimensional reference item. This experiment extends our earlier findings by demonstrating asymmetric evaluations of hedonic and utilitarian goods that result not just from a manipulation of ownership but from using a stated comparator.

FIELD SURVEY: MARKETPLACE IMPLICATIONS OF THE ASYMMETRY IN FORFEITURE AND ACQUISITION CHOICES

The results so far were obtained using both actual and hypothetical options under controlled laboratory conditions. Although the use of real products enhanced the external validity of the findings, we wanted to explore the implications of these results for consumers' valuations of goods in the marketplace. A direct implication of the findings is that, in comparison with potential buyers, owners of hedonic goods should be more reluctant to forgo these (i.e., demand higher selling prices) than owners of comparable utilitarian goods. As a consequence, buyer-seller price gaps should be larger for hedonic than for utilitarian goods.

We test this hypothesis in a field survey using an open-ended contingent valuation measure (see Mitchell and Carson 1989), given that we have previously focused on showing the effect in purely choice-based designs. Automobiles are particularly appropriate for this kind of comparison, because they clearly differ in terms of hedonic versus utilitarian content and are often advertised along these dimensions. Moreover, used car market price data are publicly available. We predict that owners of more hedonic cars will demand higher selling prices (willingness to accept or WTA) relative to potential buyers' willingness to pay (WTP) than owners of more utilitarian cars. Since non-owners' (i.e., buyers') WTP is built into aggregate market prices, the ratio of WTA-to-market prices serves as a conservative approximation of buyer-seller price gaps.⁶

Method

Two-hundred and seventeen incoming MBA students at a private southeastern university filled out a questionnaire during an orientation event (prior to any course work), in which they were asked

⁶ Since WTA-WTP gaps imply undertrading (Kahneman et al. 1990), market prices capture willingness to pay only of those non-owners who do buy and hence exceed average willingness to pay across all non-owners, including those who don't buy.

which car (make and model), if any, they currently owned. Subjects were asked to imagine that they were to sell their car in the next 30 days and to state the minimum selling price (WTA) they would demand. They then rated their cars on the hedonic and utilitarian dimensions separately on 9-point scales. The questionnaire also included the following control variables: whether subjects were leasing or financing their vehicle (coded as an indicator variable) to account for a possible effect of legal ownership on valuation, the year in which the car was built, its approximate current mileage, the price at which they had bought the car, and the perceived uniqueness of their car on a 9-point rating scale.⁷ Lastly, subjects stated if they were aware of the current Bluebook value of the car, as that might reduce any possible differences between reservation and market prices.

In addition to the survey responses, we also determined as an approximation of the market's WTP the current second-hand market price for each vehicle from Kelley's Bluebook, an authoritative price list used by many car dealers and insurance companies to determine used car values.

Results and Discussion

We predicted that the ratio of WTA-to-market prices would be higher for hedonic than for utilitarian cars. The results support this prediction and are reported in Table 4. Our respondents owned vehicles from 30 different automobile brands. Excluding those respondents who had stated that they were aware of the Bluebook prices of their cars had no significant effect on the results. We regressed the ratio of reservation prices-to-Bluebook prices on the natural logs of the original purchase price and mileage, as well as on the year in which the car was built, subjects' perceived uniqueness ratings, and on a composite measure of subjects' ratings of the hedonic and utilitarian characteristics of their vehicles. This measure was the difference between each individual's hedonic and utilitarian ratings. Thus, values could range from -8 (indicating purely utilitarian vehicles) to 0 (indicating vehicles that are seen as both utilitarian and hedonic, or as neither) to +8 (indicating purely hedonic vehicles).

⁷ Age and mileage served as controls for any systematic differences in depreciation and usage behavior between cars viewed as utilitarian or hedonic. Since WTA-WTP discrepancies may in part be motivated by the difficulty of finding substitutes, including original purchase prices and uniqueness ratings ensures that the hypothesized difference in buyer-seller gaps for hedonic and utilitarian cars is not just due to differences in income and substitution effects (Hanemann 1991).

[Insert Table 4 about here]

As predicted, the greater the net hedonic content of the vehicle, the higher the ratio of respondents' stated selling reservation prices to market prices ($\beta_{\text{DIFFERENCE}} = .017; p < .001$). Owners of hedonic cars were more reluctant to part with them than owners of utilitarian cars.⁸ Among the control variables only mileage ($\beta_{\text{MILES}} = -.085; p < .05$) and original purchase prices ($\beta_{\text{BOUGHT_P}} = .160; p < .0001$) affected the ratio of WTA-to-market prices, suggesting possible usage rate and income effects on buyer-seller price gaps for used cars. There is no evidence of multicollinearity in the independent variables. In sum, this study illustrates marketplace implications of our experimental results that show that hedonic aspects loom larger in forfeiture (e.g., selling) than acquisition (e.g., buying). Including uniqueness ratings and original purchase prices in our analysis controls for the rival explanation that hedonic cars, which might be more expensive than utilitarian cars, are seen by their owners as unique collectibles with high investment value. We note, of course, that this non-experimental field study can only provide suggestive evidence consistent with our hypothesis but naturally cannot confirm it.

GENERAL DISCUSSION

Previous research has shown that consumer perceptions and preferences have both hedonic and utilitarian dimensions. We demonstrate a fundamental asymmetry in how consumers trade off these dimensions in acquisition and forfeiture choices. Our data consistently show an increase in the weight of the hedonic aspects in forfeiture choices. Experiments 1 and 2 manipulated real ownership of two different pairs of products. Subjects in both experiments show a relative increase in the preference for the hedonic good in forfeiture compared to acquisition choices. Experiment 2 also showed that this effect is moderated by the relative salience of hedonic considerations in the forfeiture condition. This was predicted based on the notion that the increased opportunity for spontaneous elaboration in forfeiture enhances the evaluation of hedonic goods. Experiment 3 replicated the preference asymmetry by inducing a forfeiture frame through a simple attribute-level reference point manipulation instead of imposing real losses or gains on subjects. Finally, the Field Survey sacrificed experimental control to

⁸ The results reflect Bluebook prices for cars in good condition and are similar for vehicles in excellent condition.

illustrate marketplace implications of the asymmetry in forfeiture and acquisition choices. Owners of hedonic cars valued their vehicles higher relative to market prices than owners of utilitarian cars.

The series of studies limits the effect of alternative accounts of why consumers may be more reluctant to part with hedonic than with utilitarian goods. Work by Belk (1988) suggests that consumers develop symbolic relationships with their possessions. If these relationships are stronger for hedonic than for utilitarian possessions, consumers might reasonably value such options more over time. However, the duration of ownership in Experiments 1 and 2 appears too brief for such differences in relationships to develop.⁹ A related argument can be derived from Hanemann (1991), who argues that consumers' true selling prices (WTA) are a function of the substitutability and tradability of the good to be traded. If hedonic goods are more unique and irreplaceable (e.g., a bridal gown), perhaps because we develop emotional attachments to them over time, consumers might be more reluctant to forfeit them. While possible in general, these arguments do not apply to Experiments 1 or 2 where the alternatives used were widely available market goods. Moreover, we controlled for the effect of substitutability in the field survey by including perceived uniqueness as a covariate in the analysis. In practice, these alternative processes are likely to enhance the strength of the phenomenon, providing promising areas of future research.

Similarly, another rationale for greater preferences for utilitarian items in acquisition choices can be derived from Kahn and Meyer (1991) who showed that the subjective importance of attributes that are seen as enhancing or preserving a status quo can be altered by the level of attribute uncertainty. Specifically, they showed that increasing this attribute uncertainty increases the weight of preserving attributes and diminishes the weight of enhancing attributes. If people consider utilitarian goods as a means of preserving benefits in day-to-day life (e.g., a fork is a means of avoiding eating with your hands), and hedonic goods are thought of as tools that provide enhancements (e.g., wine is a tool for enhancing the quality of a meal), then the weight of utilitarian (i.e., preserving) attributes would increase

⁹ Recent research suggests that even short increments in duration of ownership may affect absolute valuations (Strahilevitz and Loewenstein 1998) but makes no predictions about differential evaluations. Future research might examine whether such differences exist for hedonic and utilitarian goods.

in acquisition choices if these are characterized by greater attribute uncertainty.¹⁰ However, it is highly unlikely that there was a difference in attribute uncertainty between the acquisition and forfeiture conditions in our experiments. We used market goods, with which subjects in both conditions had similar prior experience, and the opportunity for incremental learning in the experiments was limited.

Finally, the asymmetry in preference for the hedonic good between the acquisition and forfeiture frames is potentially consistent with findings on the omission bias (Baron and Ritov 1994; Spranca, Minsk, and Baron 1991). Baron and his colleagues report that consequences arising from action or choice induce greater feelings of responsibility than consequences that arise out of inaction or omission. If there is greater guilt associated with choosing a hedonic item (cf. Strahilevitz and Myers 1998) and if retaining hedonic goods induces less guilt than acquiring them, hedonic items may be relatively less preferred in acquisition choices. However, there are several reasons for why this argument does not provide a valid rival explanation for our findings. First, the hedonic stimuli in our studies are fairly regular consumption items. More importantly, subjects in the forfeiture condition also made active choices rather than receiving an item as the result of inaction. Thus, both conditions should have induced an equal degree of responsibility and guilt in subjects. Further, the data described at the end of Experiment 2 showed that the loss of a hedonic good was evaluated worse, even when no choice occurred and when it was described as the result of circumstances not under the protagonist's control (i.e., theft or breakage).

Lastly, we tested this rival explanation directly by examining whether acquisition choices are seen as inducing more guilt than forfeiture choices. Following Spranca et al. (1991), subjects were asked to evaluate the degree of guilt felt by two hypothetical individuals for choosing a hedonic good. A forfeiture condition was created by describing an individual who had mistakenly received both a hedonic (*M&Ms* or CD certificate) and a utilitarian (glue stick or disk certificate) prize in a lottery and then had to forfeit one of them when the mistake was discovered. In an acquisition condition, an individual was simply described as having won a choice between the same two items. Both individuals were depicted

¹⁰ We thank an anonymous reviewer for this suggestion.

as having selected the hedonic item. A random sample of 80 passengers at a regional airport rated on a 9-point scale the amount of guilt the target individuals felt as a result of selecting the hedonic item in the acquisition and forfeiture conditions. The mean guilt ratings for selecting the hedonic item were not significantly different in the forfeiture and the acquisition conditions ($M=2.69$ and $M=2.53$; $F(1,78)=.25$, $p<1$). These results do not support a correlation between responsibility and guilt and a greater preference for hedonic items in forfeiture choices.

The limitations of the present research point out promising areas for future research. One relates to the choice problems that were used. The choice sets in our experiments were limited to two alternatives. Greater complexity and task realism in acquisition and forfeiture choices from a set of more than two alternatives may induce alternative decision processes that may change the proposed effect. Second, our outcome- rather than process-oriented methodology does not examine the thoughts that subjects spontaneously generate in the two conditions and that are predicted to mediate the asymmetry in relative evaluations. Future research could examine think-aloud protocols to provide additional support for the existence and effect of differential elaboration in acquisition and forfeiture choices. Lastly, it would be interesting to test whether the preference asymmetry observed here is solely due to the intrinsic properties of hedonic and utilitarian goods, or whether the effect extends to other product features due to more general differences in the ease with which one can elaborate upon these.

Theoretical Implications

This fundamental asymmetry in how consumers trade off hedonic and utilitarian product attributes in domains of losses and gains also sheds light on the discussion of the causes of loss aversion and the processes by which it operates (e.g., Hanemann 1991; Sen and Johnson 1997). While the phenomenon itself is well established, relatively little is known about the exact processes that underlie asymmetric valuations of gains and losses. To address this gap, we need a systematic analysis of key moderators that drive differences in reference dependence and loss aversion across categories of goods and attributes. Such differences have been shown, for instance, by Hardie, Johnson, and Fader (1993) who demonstrate greater loss aversion for product quality than for price and by Irwin (1994) who finds

greater loss aversion for environmental (public) goods than market (private) goods.

The present findings contribute to this discussion in two ways. First, the endowment effect and buyer-seller price gaps may arise from a differential focus on the hedonic and utilitarian aspects of a traded good if owners/sellers are more likely than non-owners/buyers to engage in elaboration in determining their evaluations of that good. This has several implications for future research related to loss aversion. For example, one could examine the effect of asking buyers to imagine the actual experience with the good to be traded, which should attenuate buyer-seller price gaps. Furthermore, one can look at the variation in loss aversion (measured as λ) across goods and examine if it is correlated with the hedonic content of these goods and with ease of elaboration.

Second, we designed Experiment 3 so that we could compare loss aversion coefficients for hedonic (λ_h) and utilitarian attributes (λ_f) by computing a relative loss aversion coefficient λ_{hf} directly from observed choice shares. The choice-based nature of this design enables researchers to estimate relative loss aversion without having to determine the size of the individual coefficients from the usual willingness-to-pay (WTP) and willingness-to-accept (WTA) measures that previous research has used. To the extent that consumer preferences in markets are revealed through choices (i.e., joint evaluations), WTP and WTA (i.e., separate evaluations) potentially introduce a source of measurement error and bias (cf. Hsee 1998). Future research can use the present choice-based design to derive potentially more valid estimates of relative loss aversion across attributes and commodity types.

Managerial Implications

Managerial implications of the findings are straightforward. At a strategic level, if competing firms are forced to cut existing product attribute or service levels (cf. Sen and Morwitz 1996), consumers may be more reluctant to accept cuts on the more hedonic dimensions. In contrast, adding the same hedonic benefits may have relatively less impact on market share than adding more utilitarian benefits. Similar implications may hold for bargaining situations that involve tradeoffs between hedonic and utilitarian benefits. For example, labor unions may be more likely to reject management proposals to cut funding for company-owned vacation retreats (a hedonic benefit) than proposals for a slight increase in

the number of working hours (a utilitarian feature) but may value similar improvements in working hours relatively more than increased funding of vacation retreats.

Our results also suggest implications for pricing and promotion strategies. Marketers ought to be able to charge premiums for hedonic goods to which consumers have adapted in some manner when they are faced with a decision to discontinue consumption. For example, all else equal, marketers may be able to add a "hedonic" premium to the buy-out option price at which lessees of luxury or sports cars can buy their vehicles at the end of the lease term. Alternatively, we suspect that buy-out rates are higher for these hedonic than for more utilitarian cars such as compact cars or minivans. Introductory special offers are often used to acquire new customers. Our results suggest that acquisition via trial periods and samples may be relatively more effective for hedonic (e.g., cable TV) than for utilitarian goods (e.g., encyclopedias). All else equal, this may make low introductory price offers especially attractive for hedonic goods. More generally, our results also indicate that second-hand markets involving private sellers may be less efficient for hedonic than for utilitarian goods, since owners of hedonic goods may be relatively more reluctant to sell at prices that potential buyers are willing to offer.

Asymmetric preferences due to a simple task manipulation raise the question of which frame is more appropriate when making purchase decisions. From a normative perspective, tradeoffs between hedonic and utilitarian alternatives to derive overall evaluations should be made independently of particular reference items, making either frame suspect. Descriptively speaking, the answer to this question may depend upon a consumer's propensity to focus on foregone alternatives. If you tend to elaborate on what might have been, choosing the more hedonic option may make you happier. However, if out of sight is out of mind for you, the more utilitarian option may be the better choice.

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APPENDIX

Below are examples of one of the stimuli (apartments) in the inferior reference item (corresponding to acquisition; upper panel) and superior reference item (corresponding to forfeiture; lower panel) conditions in Experiment 3.

Apartments

Imagine that you have been renting a 1-bedroom apartment for the last year, which has the following features:

- *overlooks a large **parking lot***
- *is a **45 minute drive** from your place of work*

Now you have to move out of this apartment, and face a decision of renting one of the two apartments described below. Both apartments have 1 bedroom and are similar in all other respects (for example, monthly rent, safety).

	<i>View</i>	<i>Distance to work</i>
<i>your present apartment</i>	<i>Overlooks a large parking lot</i>	<i>45 minute drive</i>
<i>Apartment I</i>	<i>Breathtaking view of sunset & city skyline</i>	<i>45 minute drive</i>
<i>Apartment II</i>	<i>Overlooks a large parking lot</i>	<i>10 minute drive</i>

Apartments

Imagine that you have been renting a 1-bedroom apartment for the last year, which has the following features:

- *has a breathtaking view of the **sunset & city skyline***
- *is a **10 minute drive** from your place of work*

Now you have to move out of this apartment, and face a decision of renting one of the two apartments described below. Both apartments have 1 bedroom and are similar in all other respects (for example, monthly rent, safety).

	<i>View</i>	<i>Distance to work</i>
<i>your present apartment</i>	<i>Breathtaking view of sunset & city skyline</i>	<i>10 minute drive</i>
<i>Apartment I</i>	<i>Breathtaking view of sunset & city skyline</i>	<i>45 minute drive</i>
<i>Apartment II</i>	<i>Overlooks a large parking lot</i>	<i>10 minute drive</i>

Table 1. Relative choice frequencies for hedonic and utilitarian goods with and without reasons in Experiment 2 ($n=114$).

Reasons	Forfeiture	Acquisition
Without reasons		
M&Ms (hedonic)	85%	50%
Glue stick (utilitarian)	15%	50%
Total n in each choice	26	30
With reasons		
M&Ms (hedonic)	62%	55%
Glue stick (utilitarian)	38%	45%
Total n in each choice	29	29

Table 2. Relative choice frequencies for options that are superior in the hedonic or the utilitarian attribute in Experiment 3 ($n=141$).

Choice options:	Option is superior in:	REFERENCE ITEM	
		Superior	Inferior
Apartments ($\lambda_{ij}=1.64$)			
A	Distance to work (utilitarian)	36%	48%
B	View from apartment (hedonic)	64%	52%
Co-workers ($\lambda_{ij}=1.57$)			
C	Reliability (utilitarian)	52%	63%
D	Fun to work with (hedonic)	48%	37%
Lunch plans ($\lambda_{ij}=2.55$)			
E	Distance to cafeteria (utilitarian)	40%	63%
F	Dessert menu (hedonic)	60%	37%
Shampoos ($\lambda_{ij}=2.41$)			
G	Cleansing efficacy (utilitarian)	21%	39%
H	Softness of hair (hedonic)	79%	61%
Total n in each choice		70	71

Table 3. Logit analysis parameter estimates for predicting the probability of preferring the alternative that is superior in the hedonic attribute in Experiment 3.

	Parameter estimate	Standard error
Intercept	-0.66***	0.20
SUPERIOR REFERENCE ITEM	0.70****	0.18
APARTMENTS	0.65**	0.24
LUNCH PLANS	0.24	0.24
SHAMPOO	1.16****	0.25
Log likelihood	-388.53	
Chi-square	40.35****	
<i>df</i>	4	
<i>n</i>	564	

**** $p < .0001$, *** $p < .001$, ** $p < .01$

Table 4. OLS regression results for automobile selling price premiums in the Field Survey ($R^2 = .22$, $p < .0001$).

	Parameter estimate	Standard error
Intercept	1.361	1.135
DIFFERENCE	0.017***	0.005
LEASING ('yes'=1)	0.024	0.050
BOUGHT_P	0.160****	0.041
YEAR_BLT	-0.012	0.010
MILES	-0.085*	0.039
UNIQUE	-0.008	0.008

**** $p < .0001$, *** $p < .001$, * $p < .05$, $n = 217$

FIGURE 1.
Differential elaboration in acquisition and forfeiture choices.

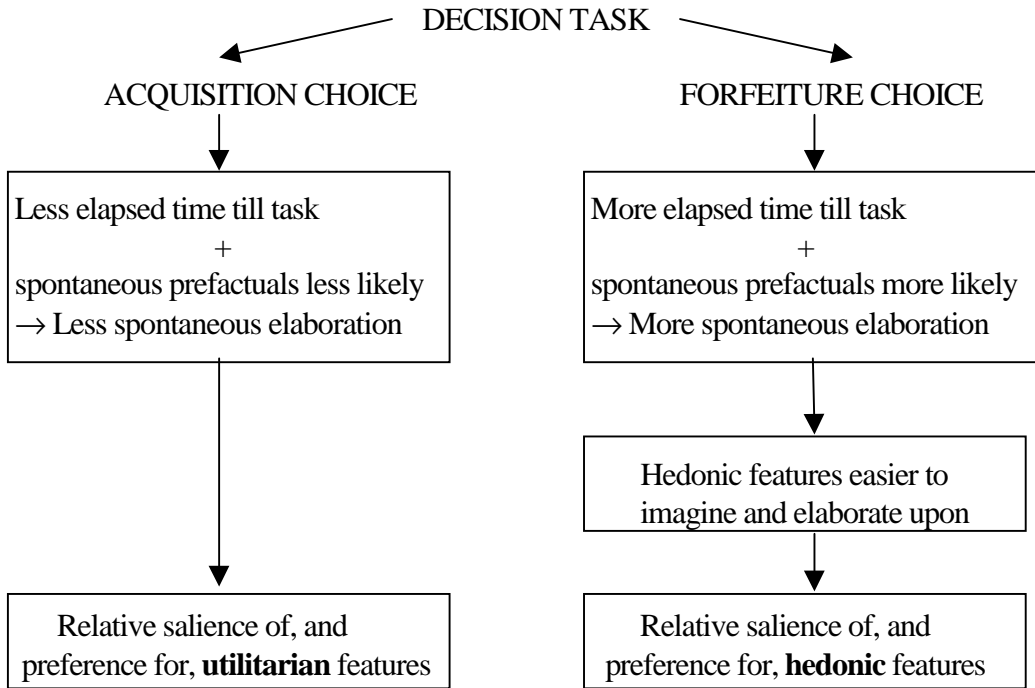


FIGURE 2.
Reference dependence for a hedonic and a utilitarian product attribute.

