

## Buyer's Remorse or Missed Opportunity? Differential Regrets for Material and Experiential Purchases

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Previous research has established that experiential purchases tend to yield greater enduring satisfaction than material purchases. The present work suggests that this difference in satisfaction is paralleled by a tendency for material and experiential purchases to differ in the types of regrets they elicit. In 5 studies, we find that people's material purchase decisions are more likely to generate regrets of action (buyer's remorse) and their experiential purchase decisions are more likely to lead to regrets of inaction (missed opportunities). These results were not attributable to differences in the desirability of or satisfaction provided by the two purchase types. Demonstrating the robustness of this effect, we found that focusing participants on the material versus experiential properties of the very same purchase was enough to shift its dominant type of regret. This pattern of regret is driven by the tendency for experiences to be seen as more singular—less interchangeable—than material purchases; interchangeable goods tend to yield regrets of action, whereas singular goods tend to yield regrets of inaction.

*Keywords:* regret, experiential purchases, material purchases, life experience, inaction

Imagine you are torn between two potential purchases, each costing around \$2,000. One is a trip to Mexico; the other a new professional-style range you have long dreamed of for your kitchen. At one level, these might seem like rather similar purchase decisions. Both are for pleasure—you do not need the vacation or the new range. Both entail the same cost and will require the same belt tightening to cover the expense. Yet one of the purchases is a material good—made to be kept in one's possession—whereas the other is experiential—designed to provide an experience one lives through. Previous research indicates that the experiential good—the vacation—is likely to bring more enduring pleasure than the material good. The research we present here suggests that this difference in satisfaction is likely to be compounded by satisfaction's flip side: regret.

We investigate the possibility that material and experiential purchases differ not only in the satisfaction they provide but in the

type of regrets they engender as well. Specifically, we predict that material goods are more likely to result in regrets of action—buyer's remorse—and experiential goods are more likely to result in regrets of inaction—the pain of a missed opportunity. Thus, buyers who pass up experiential purchases are hit with a double whammy: Not only do they miss out on the greater satisfaction an experience might bring but they also are likely to realize and regret what they missed.

The roots of this prediction lie in research on the causes of people's differential satisfaction with material and experiential purchases (Carter & Gilovich, 2010). Specifically, we maintain that, on the whole, experiences are seen as less interchangeable than material purchases: There is a smaller set of items that feel like effective substitutes for experiential goods. Singular experiences are less likely to prompt counterfactual thoughts that focus on upward comparisons because the class of items with which an experience can be compared is small. Instead, the easiest and most likely comparison is between having missed out on the experience and not having missed out, yielding regrets of inaction. Conversely, the greater interchangeability of material goods affords myriad opportunities for upward comparisons after a purchase, making material purchases more likely to spark rumination about alternative purchases and hence regrets of action.

### Material and Experiential Purchases

Over the past decade, research has examined differences in the amount of enduring satisfaction people derive from material and experiential purchases (Carter & Gilovich, 2010, 2011; Nicolao, Irwin, & Goodman, 2009; Van Boven, Campbell, & Gilovich,

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2010; Van Boven & Gilovich, 2003). Van Boven and Gilovich (2003) defined material purchases as “those made with the primary intention of acquiring a material good: a tangible object that is kept in one’s possession” and experiential purchases as “those made with the primary intention of acquiring a life experience: an event or series of events that one lives through” (p. 1194). They found, across a wide range of subject populations and time frames, that experiential purchases tend to make people happier than material purchases. Carter and Gilovich (2010) presented evidence for one mechanism underlying this phenomenon, finding that people are more likely to make invidious comparisons when it comes to material rather than experiential purchases. That is, people dwell on how their material purchases compare with other people’s and how they measure up to other purchases they might have made instead. These thoughts provide the raw material for deflating upward comparisons that diminish satisfaction.

Our article contributes to this literature in two ways. First, it elaborates on the ways that experiential purchases might bring greater happiness than material goods, examining whether experiential purchases are less likely to elicit regrets of action. Although Carter and Gilovich (2010) advanced (but did not test) the idea that material purchases might be more likely to result in regrets of action than experiential purchases, the complementary possibility (that failures to act on experiential purchase opportunities are especially likely to lead to regrets of inaction) has not been previously discussed, let alone tested. We investigate whether this influence of purchase type exists over and above any effect that differential satisfaction for material and experiential purchases might have on regret. In addition, our work examines the comparability explanation described above. We investigate whether experiential purchases are seen as more singular and whether the degree to which a purchase is seen as singular versus interchangeable underlies whether regrets of action or inaction predominate.

### Patterns of Regret

Foundational work on counterfactual thinking indicated that regrets of action tend to be stronger and more common than those of inaction because it is typically easier to imagine undoing an action taken (and mentally returning to the status quo) than to imagine what would have resulted from an unchosen option (Kahneman, 1995). Other research paints a more complex picture, documenting a temporal shift in people’s regrets over actions and inactions—namely, that regrets of action are more intense in the short term, but regrets of inaction gain prominence and stand out in the long run (Gilovich & Medvec, 1994, 1995; for an exception, see Morrison & Roese, 2011). This work on the temporal trajectory of regret demonstrates how regrets in the same domain—one’s career, for example—can shift over time from regrets of action (“I shouldn’t have criticized the vice president during the board meeting”) to regrets of inaction (“I should have applied for that position in the marketing department”).

Zeelenberg, van den Bos, van Dijk, and Pieters (2002) identified another moderator of whether regrets of action or inaction tend to dominate people’s experience, demonstrating that the valence of prior outcomes (e.g., winning or losing a previous soccer game) shape what people expect to generate the most regret—action (e.g., a coach changing the starting lineup for the next game) or inaction (keeping the lineup the same). When prior outcomes were positive,

regrets of action tend to be more intense, but when prior outcomes were negative, regrets of inaction tend to dominate. The research we report here is designed to add texture to the existing literature in this area, examining whether the object of the regret itself—specifically, its material or experiential qualities—can influence the type of regret people are most likely to experience.

Most of the research on regret has found that people’s greatest regrets, not surprisingly, often center on major life choices such as whom to marry, what job to take, or whether to continue with one’s education (Gilovich & Medvec, 1994, 1995; Gilovich, Wang, Regan, & Nishina, 2003; Hattiangadi, Medvec, & Gilovich, 1995; Landman, 1993; Roese & Summerville, 2005). Although it has not been at the forefront of the contemporary regret literature in psychology, everyday experience tells us that purchase decisions are a frequent source of regret. Buyer’s remorse is something most people have experienced: Children old enough to have an allowance are old enough to regret buying a toy that delivered less joy than anticipated. At the same time, marketers are certainly aware of the power of regrets of inaction when they suggest that consumers will regret missing out on a great deal or special offer. Although economists and marketing researchers have placed more emphasis than psychologists on the frequent connection between purchase decisions and regret, they have largely focused on factoring anticipatory regret into their models of consumer purchasing behavior (e.g., Hets, Boninger, Armor, Gleicher, & Nathanson, 2000; Loomes & Sugden, 1982). In this article, we focus squarely on the experience of regret that follows consumer purchases. The present work contributes to the regret literature by being the first to examine the systematic ways in which the object of regret—rather than the time frame of the regret or its valenced antecedents—might shape whether it takes the form of action or inaction.

In five studies, we tested the hypothesis that when purchase decisions lead to regret, they are more likely to lead to regrets of action for material purchases and regrets of inaction for experiential purchases. We ruled out differences in perceived desirability of material and experiential goods as an explanation for this pattern and investigated whether differences in regret are driven by the tendency to see experiences as more singular (less interchangeable) than material goods. In Study 1, we asked participants to consider their single biggest material or experiential regret and to indicate whether it was a regret of action or of inaction. In Study 2, we controlled for the possibility that the regrets generated in Study 1 were for purchases of radically different types and magnitudes by asking participants to consider the purchase of a material good and an experiential good that were equated for price and purchase domain. We also examined whether the phenomenon extends to predictions for others as well as experiences for the self. In Study 3, we examined our hypothesis across a broad range of commonplace regrets, which yielded a naturalistic set of regrets that we used to test, in Study 3A, the proposed mechanism for our observed effects. Coders in Study 3A who were unaware of our hypothesis rated each of the regrets generated in Study 3 on an interchangeable–singular continuum, and we examined whether this variable mediated our findings from Study 3. In addition, we directly compared the potential mediating role of interchangeability and of differential perceived value of material and experiential goods in our reported effects. In Study 4, we manipulated interchangeability, examining its influence on regrets for both material and experiential purchases. Finally, in Study 5, we pushed the

boundaries of this phenomenon, testing whether participants asked to construe the same object as either a material or an experiential purchase might yield the predicted differential pattern of regret.

### Study 1

In this study, we tested our prediction that people's biggest regrets about material purchases would tend to be regrets of action, whereas their biggest regrets about experiential purchases would tend to be regrets of inaction.

#### Method

Fifty-six Cornell undergraduates were randomly assigned to either the material or the experiential condition. They were asked to think of times they had made or had thought about making a material or experiential purchase and then read the following text:

Presumably, most of these purchases have worked out well for you. Occasionally, however, we make decisions that we end up regretting. And when we do, there are two kinds of regrets we can have. We can regret: (1) things we did that we wish we hadn't done, and (2) things we didn't do that we wish we had. When you think back on various decisions you've made with respect to your [material or experiential] purchases, what would you say is your biggest single regret?

Participants responded by checking one of two options: "a [material or experiential] purchase I *made* that I wish I hadn't," or "a [material/experiential] purchase I *didn't make* that I wish I had."

#### Results and Discussion

Twenty-four of the 29 participants (83%) in the experiential purchase condition indicated that their biggest regret was one of inaction, a result vastly different than the 10 out of 27 participants (37%) in the material purchase condition whose biggest regret was one of inaction,  $\chi^2(1) = 12.25, p < .0001, \phi = .47$ . Thus, as predicted, when people thought about experiential purchase decisions, regrets of inaction predominated; when they thought about material purchase decisions, action regrets were more likely to come to mind. But note that this design has limitations: Because we did not control the purchases participants considered, it is possible that the magnitude or the desirability of the experiential and material purchases they generated were meaningfully different. For example, research suggests that over time, experiential purchases bring greater satisfaction than material goods (Van Boven & Gilovich, 2003). Thus, if participants in the experiential condition were thinking of more desirable items than participants in the material condition, this might artifactually account for why they were more likely to have regrets of inaction (over missing out on a qualitatively better purchase). We addressed this concern in Study 2.

### Study 2

Study 2 provided a more controlled test of our hypothesis because participants were asked to consider a specific material or experiential purchase decision—from the same domain and of the same monetary value—and to tell us whether they thought a regret of action or inaction would be more intense. By framing these specific purchases in the context of a third party's choice, we could

also determine whether the pattern of results from Study 1 extends from the self to judgments about others. To investigate the impact of purchase desirability, we also asked participants to rate how much they would enjoy receiving the material or experiential purchase we described.

#### Method

Eighty-four participants (46 women and 38 men, ages ranging from 18 to 61 years) were recruited through Amazon's Mechanical Turk and paid for their participation. Participants were randomly assigned to read one of the following purchase scenarios:

I'd like you to imagine two people—Joe, who bought a new iPod Shuffle (\$55) but now wishes he hadn't, and Mark, who chose not to buy a new iPod Shuffle (\$55) but now wishes he had.

I'd like you to imagine two people—Joe, who bought a ticket to a rock concert (\$55) but now wishes he hadn't, and Mark, who chose not to buy a ticket to a rock concert (\$55) but now wishes he had.

In both conditions, participants were asked to indicate on a 7-point scale from 1 (*the person who acted*) to 7 (*the person who failed to act*) which of the two individuals was more likely to regret his decision. Participants were then asked to imagine that someone gave them an iPod Shuffle or a concert ticket and to rate how much they would enjoy it on a 1 (*not at all*) to 7 (*extremely*) scale. Note that the products selected for the two scenarios belonged to the same general domain—music—and had the same price attached to them. These prices were very close to the actual product values; according to a leading music-industry trade publication, the average price for a rock concert ticket at the end of 2010 was \$60 and the price of an iPod Shuffle was \$55. Finally, both purchases are common enough that we expected participants to have no difficulty imagining the purchase and the potential for regret.

#### Results and Discussion

Participants in the material condition thought that the experience of buyer's remorse would be more intense than the experience of regret over a missed opportunity to buy the iPod ( $M = 2.47$ ), one-sample  $t(37)$  against the midpoint value of 4 =  $-4.88, p < .000, d = 1.60$ . Participants in the experiential condition, in contrast, predicted that action and inaction regrets for the concert purchase would be equal ( $M = 4.00$ ),  $t < 1$ . The difference between the ratings of the two groups of participants was significant, unequal variances  $t(82) = 3.28, p = .002, d = 0.71$ . Critically, there was no difference in how much participants felt they would enjoy receiving the iPod ( $M = 5.16$ ) versus the concert ticket ( $M = 5.37$ ),  $t < 1$ . Furthermore, controlling for the desirability of the iPod or concert ticket left the effect of condition unchanged,  $\beta = -1.50, t(81) = -3.15, p = .002$ .

These data thus further support our hypothesis using a paradigm in which the material and experiential purchases were from the same domain and of equal monetary value. They augment the results from Study 1, showing that people not only expect their own regrets to be different for material and experiential purchases but also expect the same pattern for the regrets of others. These data also suggest that the effect is not driven by differences in the

perceived desirability of material and experiential goods—a finding that receives further support in Study 3A and Study 5.

### Study 3

Study 3 was designed to extend the results of Study 1. Participants were asked to generate a number of specific regrets from their own lives and to indicate whether each was a regret of action or inaction (rather than to specify their single biggest regret). We also used this set of naturalistic material and experiential regrets in further analyses (in Study 3A) to shed light on the mechanism underlying our findings.

#### Method

Seventy-five Cornell undergraduates participated in exchange for extra course credit and were randomly assigned to either the material or the experiential condition. After reading a definition of a material purchase (“a tangible object that you buy and keep in your possession”) or an experiential purchase (“a life experience”), participants read that regrets about purchases can come in the form of regrets of action or inaction. Specifically, the text read as follows:

Presumably you’ve been happy with most of your decisions about whether or not to buy [material or experiential] objects. Occasionally, however, we make decisions that we end up regretting. Sometimes, for example, we spend money on something and afterwards realize the purchase was a mistake, and we end up regretting the action we took. Other times we don’t make a [material or experiential] purchase that we had thought about; afterwards we realize that we should have made the purchase and we end up regretting our inaction.

Participants were then asked to list three specific material or experiential regrets that came to mind. After they wrote them down, we asked them to go back and label each with an *A* for action or an *I* for inaction.

#### Results and Discussion

Two participants were excluded because they did not provide specific regrets, instead using generalities such as “buying an object that you get sick of.” Another participant was excluded because he accidentally participated twice, completing both conditions. Of the remaining 72 participants, the mean number of regrets of action was significantly higher for participants in the material purchase condition ( $M = 2.24$ ) than in the experiential purchase condition ( $M = 1.54$ ),  $t(70) = 3.48$ ,  $p < .001$ ,  $d = 0.83$ , and the reverse was (of course) true for regrets of inaction. These results demonstrate that even fairly commonplace purchase decisions gone awry—such as bad meals, clothes participants never wore, campus concerts, and computer games—conform to the same differentiated pattern of regrets for material and experiential purchases: People experience more regrets of action over material goods and more regrets of inaction over experiential goods. These findings are consistent with those of Study 1 even though participants were asked to list several regrets and did so prior to encoding them as regrets of action or inaction.

### Study 3A

Previous work by Carter and Gilovich (2010) found that part of the reason experiential goods bring greater happiness is that they are less likely to elicit invidious comparisons to other goods, resulting in less time spent thinking about other purchases that might have been better than the chosen option. Carter and Gilovich noted that experiences are less likely to spark such comparisons because, being less tangible, they are literally harder to liken to one another—it is harder to line up and compare, feature by feature, the different possible options. Good luck comparing the ambience at Tetsuya’s with that at Charlie Trotter’s, the quality of light at Bondi versus Hanalei, or the view from the Blue Mountains versus Muir Pass.

In Study 3A, we pursued this idea further, examining whether experiences tend to be seen as more *sui generis*—of their own kind, or unique—than material goods and, in turn, whether material goods are seen as more interchangeable. The idea of comparability that Carter and Gilovich (2010) referred to reflects whether a purchase has features that can be easily aligned and compared with others in its class. Here we focus on the notion of interchangeability, which reflects the size of the class and the uniqueness of its members. Are there many members of the class and are they seen as ready substitutes for one another? We maintain there is a smaller set of things that provide the same benefits of the average experience than there is of the average material good.

How might this influence the type of regrets people are likely to have over material and experiential purchases? When goods are interchangeable with others of the same type, regrets of action become more likely, as there is a large pool of alternatives with which to compare the purchase—any of which might look more appealing if the current purchase does not meet expectations. Conversely, when a good is seen as singular or unique, regrets of action are less likely because it is harder to think of a counterfactual world in which a better outcome would have resulted if only a different purchase had been made. Instead, when the items or events in question are not interchangeable, it is likely to be failures to act that stand out, as the individual comes to the realization that a unique opportunity has passed.

Returning to the stimuli used in Study 2, a great many products serve the same function as an iPod shuffle, including similar models from Sony or Samsung and a variety of smartphones that play music. In contrast, there are many fewer acceptable substitutes for a specific rock concert. Although there are certainly other concerts one could attend, even artists in the same genre do not provide the same experience: Performances by David Byrne and Regina Spektor just do not feel interchangeable. We contend that people see experiential goods, on the whole, as less interchangeable than material goods. We tested this hypothesis in this study by having coders evaluate each of the purchases participants listed in Study 3 on the dimension of interchangeability. We then tested whether the interchangeability of the items or events in question is related to whether the purchaser’s regret was one of action or inaction. We predicted that the interchangeability of the items would mediate the relationship between type of purchase (material vs. experiential) and type of regret (action vs. inaction). We also examined whether differential desirability of material and experiential purchases may have played a role in the different types of



regrets people tend to experience over material and experiential purchase decisions.

## Method

Three research assistants who were unaware of our hypothesis and previous findings coded the full set of regrets generated in Study 3 on the dimension of interchangeability. More specifically, they read the following text:

Some things you can purchase are largely interchangeable—there are many other things just like it that could substitute and serve essentially the same function. Things that are interchangeable are easily replaceable. Other things you can purchase are much more singular—there are not many things like it or that would be a good substitute. Things that are singular feel unique and hard to replace.

For each of the purchasing decisions you read about, *we'd like you to rate the object or experience for how interchangeable it is*. Please use a scale between 1 and 5, where the values mean the following:

- 1 = Completely Interchangeable
- 2 = Mostly Interchangeable
- 3 = Somewhat Interchangeable
- 4 = Not Very Interchangeable
- 5 = Not Interchangeable At All

The responses from the 72 participants in Study 3, who each provided three regrets, were given to the coders in a single random order. The coders were given the regrets exactly as written by the Study 3 participants and all 216 regrets were rated by each coder.

A different set of three coders, who were also unaware of our hypothesis and previous findings, coded the full set of purchases generated by participants in Study 3 on the dimension of desirability. Coders were asked to rate the object or experience by answering the question “Cost aside, how desirable would this be to the average Cornell student? How much would they enjoy it?” The 5-point scale was anchored at 1 = *very little* and 5 = *extremely*. The responses from the 72 participants in Study 3 were stripped of any reference to regret, leaving only the purchase description. A list of these purchases was given to the coders in a single random order, and all 216 purchases were rated by each coder.

## Results and Discussion

The ratings made by both sets of coders were reliable (interchangeability  $\alpha = .77$ , desirability  $\alpha = .81$ ) and so they were averaged to create two indices: one of the interchangeability and one of the desirability of each purchase.<sup>1</sup> As predicted, material purchases were rated as significantly more interchangeable than experiential purchases ( $M_{\text{material}} = 2.09$ ,  $M_{\text{experiential}} = 3.14$ ),  $\beta = .624$ ,  $t(214) = -11.68$ ,  $p < .0001$ . In addition, the more interchangeable a purchase was, the more likely the regret associated with it was one of action,  $\beta = .374$ ,  $t(214) = 5.87$ ,  $p < .0001$ .<sup>2</sup> As detailed in Study 3, material purchases were significantly more likely to result in regrets of action than experiential purchases,  $\beta = .248$ ,  $t(214) = 3.73$ ,  $p < .001$ . To test whether interchangeability mediated the relationship between purchase type and regret type, we used the Baron and Kenny (1986) procedure, with the correc-

tion specified by MacKinnon and Dwyer (1993) to account for the fact that our dependent variable (regret type) was dichotomous. Interchangeability fully mediated the relationship between purchase type and regret type, Sobel  $Z = 3.76$ ,  $p < .001$ , such that when interchangeability was included in the model, purchase type was no longer a significant predictor,  $\beta = .02$ ,  $p > .7$ .

Consistent with the findings reported by Van Boven and Gilovich (2003), the experiential purchases that participants listed were rated as significantly more desirable ( $M = 3.75$ ) than their material purchases ( $M = 3.17$ ),  $t(211) = -4.35$ ,  $p < .0001$ . In addition, desirability was a significant predictor of regret type, with especially desirable purchases being more likely to be associated with regrets of inaction ( $\beta = .139$ ,  $t(209) = 4.37$ ,  $p < .0001$ ). However, desirability did not mediate the relationship between purchase type (material or experiential) and regret type: Purchase type remained significant when desirability was included in the model,  $\beta_{\text{condition}} = .115$ ,  $t(208) = 3.49$ ,  $p = .001$ ;  $\beta_{\text{desirability}} = .173$ ,  $t(208) = 2.66$ ,  $p = .008$ . Finally, interchangeability continued to mediate the effects of condition on regret type even when desirability was included as a covariate in the model, Sobel  $z = 2.78$ ,  $p < .005$ . These findings thus support our contention that it is interchangeability, not desirability, that drives the relationship between material and experiential purchases and regret type (see Figure 1).

Although not the focus of this article, the reasons that experiential purchases are seen as less interchangeable than material purchases are worth considering. One reason doubtless stems from the ephemeral nature of experiences. The fact that they do not persist makes it both harder to compare them with foregone experiential purchases and harder to imagine “returning” one and having a different experience instead. Another likely reason is that experiences feel closer to the self than material goods, and their close association with the self makes them seem more unique (Carter & Gilovich, 2011).

## Study 4

To conduct a more controlled test of the importance of interchangeability in the type of purchase regrets people are likely to experience, we manipulated the interchangeability of both a material purchase and an experiential purchase. Both material and experiential purchases vary along the dimension of interchange-

<sup>1</sup> A fourth coder also rated the interchangeability of the full set of purchases, but her ratings were poorly correlated with those of the other three (average  $r = .15$ ) and reduced the overall reliability of the four sets of ratings to .61. The analyses above were therefore conducted using just the ratings of the three reliable coders, but the findings and  $p$  values do not change if all four coders' ratings are included in the composite index of interchangeability.

<sup>2</sup> When material and experiential goods are analyzed separately, interchangeability is a highly significant predictor of regret type for experiential goods,  $\beta = .386$ ,  $t(103) = 4.25$ ,  $p < .0001$ , but it is a much weaker predictor of regret type for material goods,  $\beta = .154$ ,  $t(107) = 1.61$ ,  $p = .11$ . This appears to be caused by the fact that the range of interchangeability ratings for material goods (Min 1 to Max 3.33) was much smaller than the range for experiential goods (Min 1 to Max 4.67). This underscores our contention that not only are material goods as a whole seen as significantly more interchangeable than experiences, but they are also less variable in how interchangeable they seem.

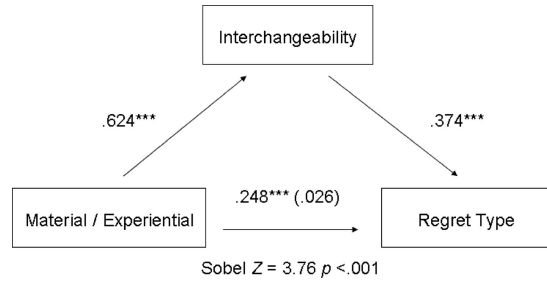


Figure 1. The mediating role of interchangeability on the relationship between type of purchase and type of regret. The beta weight in parentheses reflects the value for type of purchase when the mediator is included in the regression. The Sobel Z was calculated using the MacKinnon and Dwyer correction for mediation with dichotomous outcome variables. \*\*\*  $p < .001$ .

ability. Dinner out at a local chain restaurant is a fairly interchangeable experience (if you cannot get into Chili's, you can always eat at Applebee's), whereas dinner at a local Ethiopian restaurant is much less so. Similarly, a summer sundress is a fairly interchangeable material good (many dresses would have roughly the same appeal), but a wedding dress is more singular: Most women do not think that just any old wedding dress will do. Given that interchangeability predicted regret type for both material and experiential goods in Study 3A, we expected that making either type of purchase less interchangeable (more singular) would increase the likelihood that it would elicit regrets of inaction.

## Method

Sixty-six participants (38 women, 28 men, mean age = 34 years) were recruited through Amazon's Mechanical Turk and paid for their participation. Participants were randomly assigned to one cell of a  $2 \times 2$  design. The 36 participants in the material purchase condition were asked to imagine that they were looking to buy a dresser and were randomly assigned to read about either a dresser they found at the local mall (interchangeable) or an antique dresser they found at an estate sale (singular). The 30 participants in the experiential purchase condition were asked to imagine that they were trying to decide whether to buy a plane ticket to either their family's yearly (interchangeable) or their family's first ever (singular) reunion getaway in California. All participants were asked to consider the two types of regret—purchasing the dresser or ticket and wishing they had not or not purchasing it and wishing they had—and to indicate on a 1–7 scale which regret would be stronger, from 1 (*buying the [dresser or ticket]*) to 7 (*not buying the [dresser or ticket]*). A separate sample of participants from Mechanical Turk rated the four scenarios using the same interchangeability scale described in Study 3A. These participants confirmed that the dresser from the mall is considered more interchangeable than the antique dresser,  $t(19) = 6.75, p < .0001$ , and that the ticket to the annual family reunion is considered more interchangeable than the ticket to the first-time reunion  $t(19) = 2.46, p < .03$ .

## Results and Discussion

As predicted, there was a main effect of interchangeability, such that participants were more likely to believe that they would

experience regrets of inaction for purchases that were singular than for purchases that were interchangeable,  $F(62) = 19.59, p < .0001, \eta_p^2 = .24$ . Participants who read about the dresser framed as a singular purchase thought the regret of inaction would be stronger ( $M = 4.94$ ) than did those who read about the dresser framed as an interchangeable good ( $M = 2.39$ ),  $t(62) = 3.65, p < .001, d = 0.927$ . Similarly, participants who considered buying a ticket to fly home for a first-time family reunion thought the regret of inaction would be stronger ( $M = 5.43$ ) than did those who read about buying a ticket to the annual event ( $M = 3.38$ ),  $t(62) = 2.67, p < .01, d = 0.68$ . Neither the main effect of purchase type nor the interaction between interchangeability and purchase type was significant, both  $ps > .15$ .

## Study 5

Study 5 was designed to explore the boundaries of our main finding by examining whether the very same object, when viewed through a material or an experiential lens, might yield different patterns of regret. Although many purchases are unambiguously material or experiential, others straddle the line between the two categories, having both material and experiential properties. In Study 5, we manipulated whether one such ambiguous purchase—a 3-D TV—was framed either as an experience or as a material good. As in Study 2, participants were then presented with two individuals who regretted their decision and were asked whose regret would be stronger—the person who made the purchase or the person who did not. We expected that focusing on the experiential features of what is generally seen as a material good would increase the predicted likelihood and strength of regrets of inaction. We also included questions that would allow us to examine whether our framing manipulation had an effect on perceived product value and whether any such effect might have artifactually yielded the predicted difference in type of regret.

## Method

Sixty-two participants (33 men, 29 women) were recruited through Amazon's Mechanical Turk and paid for their participation. Participants were randomly assigned to either the material or the experiential condition. In the material scenario, Mark (who ultimately bought the TV) and Joe (who did not buy the TV) were both described as "imagining where a 3-D TV set would go in their apartments, what it would look like, and what their friends would think." In the experiential condition, Mark and Joe were described as "imagining the fun they'd have watching it with friends, and how cool it would be to experience TV in a whole new way." In both conditions, participants read that "Mark ended up buying one, but for various reasons now wishes he hadn't. Joe did not buy one, but for various reasons now wishes he had." Participants were asked to indicate which person would regret their decision more on a 1–7 scale, with 7 representing more regret on the part of Joe, who chose not to buy, and 1 representing more regret on the part of Mark, who chose to buy. Finally, participants were then asked to imagine that they were in the market for a new TV and to report how much they would be willing to pay for a 3-D TV. They also indicated how much they would enjoy owning a new 3-D TV and how much satisfaction a new 3-D TV would bring them, on scales

ranging from 1 (*not at all/none*) to 5 (*extremely/an extreme amount*).

## Results and Discussion

Participants who read about the 3-D TV framed as a material good thought the regret of action would be stronger ( $M = 2.10$ ) than did those who read about the 3-D TV framed as an experience ( $M = 3.34$ ), unequal variances  $t(60) = 2.28, p = .02, d = 0.62$ . Predicted enjoyment and satisfaction were highly correlated ( $r = .89$ ) and so we averaged them together to form an index of product desirability. We also calculated the natural log of the prices participants indicated they were willing to pay for a 3-D TV to normalize that distribution. Our framing manipulation did not significantly influence perceived desirability or willingness to pay (both  $ps > .6$ ). Furthermore, purchase framing remained a significant predictor of regret type when both desirability and log pay were included in the relevant multiple-regression analysis,  $\beta = .129, t(54) = 2.425, p = .02$ .<sup>3</sup> Note that the mean ratings of both groups were below the midpoint, indicating more overall anticipated regret of action. This may reflect participants' familiarity with buyer's remorse when it comes to the latest and greatest of new technologies—technologies that are often quickly rendered obsolete. Nevertheless, that the framing of the purchase to focus on its experiential properties shifted its regret profile suggests that keeping an object's experiential properties in mind when making (and later evaluating) a purchase might lead to less buyer's remorse.

### General Discussion

Understanding and predicting possible regrets is an important part of extracting as much satisfaction and pleasure from our purchasing power as possible. Regrets, whether of action or inaction, are painful, and their pain needs to be factored into the hedonic equation underlying people's purchasing decisions. Our research suggests that when it comes to such decisions, the regret people are most likely to experience is indeed predictable—broadly by whether the purchase is a material or an experiential good and more narrowly by how interchangeable the purchase is with others in its class. This knowledge might make it easier to avoid some purchase regrets in the first place: Tilt toward experiences over material goods when the two types of expenditures are in close competition and there are not enough funds to cover both.

Studies 1 and 3 demonstrate that people are prone to different types of regret for material and experiential purchases, both with respect to subjects' greatest purchase regrets and with respect to more mundane, everyday regrets that they supplied for us. Participants in Study 2 anticipated this same pattern of regrets for others, even when the magnitude and domain of the material and experiential purchases were held constant. Focusing participants' attention in Study 5 on either the material or the experiential features of the very same purchase also yielded this differential pattern of regret. In Study 3A, we coded the specific regrets listed by participants in Study 3 to test a mechanism responsible for these effects. The experiential purchases participants generated in Study 3 were rated as less interchangeable than the material purchases they described, and this difference in interchangeability mediated the relationship between purchase type (material or experiential)

and regret type (action or inaction). To gain experimental control over this mediator, in Study 4, we presented participants with one of two scenarios in which material or experiential purchases were more or less interchangeable. The interchangeability of the purchase predicted whether participants thought it would elicit action or inaction regrets, independent of whether it was an experience or a material good.

These studies extend the literature on regret, illuminating the objects of regret—rather than the time frame in which they are evaluated—as a determinant of whether action or inaction regrets are likely to predominate. We chose to study this in the realm of consumer purchases, a context that often generates regret but has not (surprisingly) received much attention in the contemporary psychological literature. Our work also complements existing research on material and experiential goods, showing that the previously documented tendency for experiences to induce more enduring satisfaction than possessions is mirrored in satisfaction's flip side: regret. Experiences tend to provide more satisfaction than material goods, and the failure to realize experiences tends to elicit regrets of inaction. Conversely, not only do material purchases typically lead to less satisfaction than experiential goods but they are more likely to lead to outright regret over having made the purchase in the first place. These findings thus parallel the message that experiential purchases yield more satisfaction than material goods, constituting an analogous result on what is, in essence, an additional measure of satisfaction: type of regret.

### Role of Interchangeability in Counterfactual Thinking and Regret

Research on regret is closely linked to the literature on counterfactual thinking, with the signature finding being that people are most likely to regret a negative outcome when it is easy to imagine counterfactual states of the world in which the outcome would have been better (Kahneman & Tversky, 1982; Miller & Taylor, 1995; Roeser & Olson, 1995). This ease of counterfactual generation is driven by the perceived mutability of the event: How easily can the outcome or its antecedents be mentally undone (Kahneman, 1995)? Past research has focused on such determinants of mutability as departures from normality (Kahneman & Miller, 1986), position in a temporal sequence (Miller & Gunasegaram, 1990), and proximity to a notable outcome (Medvec, Madey, & Gilovich, 1995). The interchangeability of an item or event is another determinant of mutability, influencing the likelihood that an individual will consider alternative purchases that might have been made. The extent to which a purchase is seen as one of a broad set of substitutable items or as something more one of kind influences how easy it is to imagine a counterfactual world in which a different and perhaps better purchase was made. And as we have shown, this has implications for the types of regrets people tend to have over their purchase decisions. There are, no doubt, other features of purchasing decisions, such as the extent to which the buyer deliberated over a purchase or chose mindlessly,

<sup>3</sup> Note that desirability was a significant predictor of regret type, such that the more participants rated the 3-D TV as desirable, the more likely they were to believe that regrets of inaction would predominate,  $\beta = .533, t(54) = 2.21, p = .03$ .

or whether specific alternative purchases were considered, that might also influence the likelihood of regret. It is unclear, however, whether these other determinants of purchase mutability would differ across material and experiential goods and hence influence the type of regret that each type of purchase tends to elicit.

### Limited and Lost Opportunities

Two recent articles highlight the importance of lost opportunities in determining the nature and intensity of regret. Beike, Markman, and Karadogan (2009) have put forward evidence that people's most intense regrets are ones involving lost opportunities and that the life domains that produce the greatest number of regrets (e.g., education) are those in which people perceive fewer opportunities in the future. The authors did not distinguish between regrets of action and inaction, and previous research on the temporal aspects of regret indicates that regrets in the domains they reference can be of either type. It is likely, furthermore, that part of what makes an opportunity feel truly lost—and thus what amplifies the regret—is how interchangeable it is. For example, a regret of inaction over a lost opportunity to study abroad in Kenya might be more intense than regret over a failure to study abroad in England because, for most U.S. citizens at least, time spent in England seems more interchangeable with other experiences they might have. Even with respect to regrets of action, regret intensity might be moderated by the interchangeability of the action that now cannot be remedied. Regrets about majoring in English might be stronger than regrets about majoring in medieval architecture because although both resulted in the lost opportunity of choosing a major with better job prospects, the English major—being more commonplace—feels more interchangeable with other popular but more practical majors.

Recent marketing research suggests that in the case of limited-opportunity purchases, the established temporal pattern of regret can flip, such that regrets of inaction dominate in the short term and regrets of action can grow stronger as time passes after the purchase (Abendroth & Diehl, 2006). This work has several interesting points of intersection with what we report here. First, it is notable that Abendroth and Diehl (2006) based their conclusions on three material purchases that are all essentially markers of an experience (souvenirs from a vacation, a live concert CD, and a concert t-shirt from a performance the participant imagined attending). The fact that these purchases, even in the short term, elicited regrets of inaction underscores our findings from Study 5 in which the framing of a (primarily) material purchase in experiential terms influenced the type of regret it provoked.

The idea of limited opportunity is certainly related to interchangeability—the two often go hand in hand. Indeed, limited purchasing opportunities often derive their power from the degree to which other items cannot serve as substitutes. There is no great loss in a limited opportunity to buy a Samsung TV—perhaps the model is being closed out—if a comparable Sony TV remains available. On the flip side, imagine that you live in San Diego and can visit Sea World whenever you want. While at Sea World, you debate whether to spend the money to swim with dolphins and ultimately decide not to. Although nothing limits your ability to go back there the very next day, it is still easy to imagine sitting at

home that evening regretting not having purchased such an exceptional experience.

### Future Directions

Several avenues of future research merit exploration. First, the pattern of results we report may be moderated by materialism. Materialists may be more inclined than the general population to see material goods as singular and thus experience greater regret than less materialist people over missed opportunities to buy them. Conversely, people who are dispositionally experience seeking should generally be less likely to experience regrets of action and more likely to experience regrets of inaction. Second, it would also be worthwhile to explore how the opposing temporal patterns outlined by Gilovich and Medvec (1994, 1995) on the one hand and Abendroth and Diehl (2006) on the other apply to material and experiential purchases. It may be that a fair number of the short-term regrets of action that Gilovich and Medvec reported involve material purchases, and the bulk of their corpus of long-term regrets of inaction involve missed experiential opportunities. Another potentially fruitful area of future research would be to examine the impact of the differential amount of social interaction that tends to accompany material and experiential purchases. Our findings suggest that sociality might influence people's likely regrets because social experiences—by virtue of the unique combination of personalities attendant at each one—often seem more singular. Going to the movies by oneself on Thursday is not all that different from doing it on Friday, but going with one group of friends rather than another or even the same group of friends who are in a different mood is not nearly as interchangeable. Finally, the results of Study 5 highlight important opportunities for the study of behavioral interventions in this domain. Might an intentional focus on the experiential elements of even clearly material purchases lead to greater satisfaction and diminished regret?

In the end, we hope our research helps inform people's future purchase decisions. As this article was being written, one of the authors was the subject of our opening example. She was debating whether to take a trip to Mexico with her husband and, on seeing the price tag for tickets, had a hard time deciding to go. Around the same time, she considered replacing the range in her kitchen, a rusty unit from the 1980s with a tendency to spew gas for 20 minutes while deciding whether to light. After her husband reminded her of this very line of research, she sheepishly bought the tickets, had a wonderful week on the beach, and does not regret a penny she spent getting there. She still has not bought the stove of her dreams but has no regrets over that inaction—the kitchen has yet to explode. Until it does, there are still plenty of ranges from which to choose.

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