The Material-Experiential Asymmetry in Present Bias: Why Material Items Lead to Less Present Biased Preferences

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CONTRIBUTION STATEMENT

An extensive literature has demonstrated that consumers are present biased when delaying present outcomes (a.k.a., show hyperbolic discounting, e.g., Kim and Zauberman 2013; Malkoc and Zauberman 2006; Thaler 1981). Yet, most of the literature on present bias and intertemporal choice has predominantly considered monetary outcomes (i.e., delaying dollars), assuming (perhaps implicitly) that how the money will be spent is irrelevant to how consumers delay rewards. As such the literature lacks a systematic study of present bias with different product types. Examining this issue, we find that consumers discount material purchases less and show less present bias than equivalent experiential purchases. Furthermore, we demonstrate that this decrease in present bias is due to differences in the number of episodes over which material and experiential purchases are consumed. Our results contribute to the literature in multiple important ways. First, we establish that the type of the product being delayed matters and that studying intertemporal choice and discounting using monetary outcomes might be an over simplification. Second, by showing that the number of consumption episodes drives the effect, we contribute to the literature by establishing a previously unexamined driver of present bias. Third, our results can also help explain why some very well-respected researchers (e.g., Dube, Hitsch, and Jindal 2015) have questioned present bias altogether—namely because they have focused on durable goods that show much lower levels. Fourth, we contribute to the material-experiential literature (which focused predominantly on happiness), by showing that there are other important consequences (i.e., present bias and discounting) of the material-experiential distinction. Finally, despite the fact that material goods usually have negative associations (e.g., materialism and overspending), we find evidence of an instance in which material purchases are treated more “rationally” compared to experiential purchases. In sum, our research provides important contributions to the discounting, intertemporal choice, choice modeling, and material-experiential literatures.

ABSTRACT

Consumers spend their money to acquire both material products and experiences. While much can be said about differences between material and experiential purchase, little is known about consumers’ impatience towards such products. The authors propose that these items are different in terms of how willing consumers are towards delaying them, and also in how steeply this discounting declines over time (a.k.a., present bias or hyperbolic discounting). Five studies provide evidence that, compared to equivalent material purchases, when delaying an experiential purchase, consumers display higher discount rates that decline significantly faster over time. Finally, we demonstrate that this effect is driven by whether the utility is extracted over a single or multiple consumption episodes. As such, expanding experiences to be consumed over multiple episodes diminishes the asymmetry.

KEYWORDS: present bias; hyperbolic discounting; material versus experiential purchases; consuming over time
Consumer research is the study of how consumers spend their money and the ensuing consequences. Consumers routinely decide whether and when to spend money on doing things (experiential purchases) or having things (material purchases), either in the present or future. While a large literature has studied the consequence of consuming experiential and material purchases on consumer happiness and well-being (Carter and Gilovich 2010; Nicolao, Irwin, and Goodman 2009; Van Boven and Gilovich 2003; for a dialogue, see Pham 2015), very little is known about the anticipatory value of these types of purchases (Dunn and Weidman 2015), with no work to date examining how consumer delay these different kinds of purchases. Instead, almost all of the research on how consumers perceive and delay purchases over time (a.k.a., present bias or hyperbolic discounting) has focused on monetary outcomes, with the implicit assumption that how the money will be spent is irrelevant to the discounting problem.

When consumers make decision regarding the timing of their consumption, their decision involves tradeoffs between costs and benefits that are distributed over time. In a consumption context these intertemporal tradeoffs often entail consumers trading a quicker consumption with some monetary incentives. For instance, a faster delivery for a product purchased online often costs more or a sooner date for a concert might be more expensive. Examining such decisions with intertemporal components, a large literature has demonstrated that when faced with such situations, consumers not only show high levels of impatience, but impatience declines rather steeply as the time horizon gets longer – a phenomenon often referred to as present-biased preferences (a.k.a. hyperbolic discounting; for a review see Berns, Laibson, and Loewenstein 2007; Urminsky and Zauberman forthcoming). For example, consumers generally require a higher daily premium to avoid a 3-day delay in delivery (about $5, $1.8 per day) than a 10-day delay (about $10, $1 per day; Malkoc and Zauberman 2006).
Examining the literature on present bias we discovered a commonality: Almost all of the research in this domain has used monetary outcomes with an assumption that how the money is spent is irrelevant to the discount function (Estle, Green, Myerson, and Hold 2007). This choice is highly justifiable (money is used to purchase goods and services), as well as convenient (monetary outcomes allows for simplification and value standardization), but given the mounting evidence documenting differences between material and experiential purchases (Pham 2015), there is reason to believe that this might be an oversimplification.

We study this important assumption and limitation to the intertemporal choice literature, and we propose that material items and experiences are distinctly different in the way they are discounted over time. That is, consumers not only have lower discount rates for material purchases, but they are less present biased towards material (vs. experiential) purchases. We further find that this difference may be explained by the number of consumption episodes over which material and experiential purchases are consumed.

Our findings contribute to the intertemporal choice literature by demonstrating that the type of outcomes used systematically alter the extent of present biased observed, indicating that a different consumption pattern over time can have significant effects on the compensation consumers require to delay. In addition, this result might help explain why some researchers have found vastly differently discount rates across experimental stimuli (and sometimes found little evidence of hyperbolic discounting in a durable good context, e.g., Dube, Hitsch, and Jindal 2015). The findings also have an important contribution to the experiential-material purchase literature by identifying an instance when material items evoke a more desired pattern of preference (i.e., time consistence or less present bias) than experiential ones. In the pages to
follow, we first review the literature, motivate our hypotheses, report results from five studies, and discuss implications of our findings to marketing theory and practice.

**PRESENT BIAS: DRIVERS AND MODERATORS**

As discussed previously, present bias refers to a declining rate of discounting as the time horizon increases (e.g., Strotz 1955; Thaler 1981). These preferences manifest when consumers require higher premiums for a delay period that is short compared to long. For instance, in his now classic study, Thaler (1981) found that when asked to delay $250 for 3 months, people on average required an extra $50 ($16.7 per month). When the delay period was quadrupled to one year, people on average required an extra $100 ($8.3 per month), effectively cutting their discount rate by half. Present bias has been studied extensively in economics, psychology, decision research and marketing (Berns et al. 2007; Frederick, Loewenstein, and O'Donoghue 2002). This interest in present bias is partly due to its stark violation of the rational economic model’s assumptions (Samuelson 1937), and partly because it has important consequences for various areas of research: consumer behavior (Malkoc and Zauberman 2006; Zauberman 2003), organizational decision making (Malkoc, Zauberman, and Bettman 2010), financial management (Choi et al. 2011), unemployment and job search (Fang and Silverman 2009), obesity and smoking (Khwaja et al. 2007; Richards and Hamilton 2012), saving (Liabson 1997), and risk taking (Shavit and Rosenboim 2015). While present bias has been mainly modeled using hyperbolic functions (e.g., Ainslie and Haslam 1992), quasi-hyperbolic functions (e.g., Laibson 1997; Zauberman 2003) have also been proposed that give more weight to outcomes in a first
period than in later periods, and this disproportionate weight is greater the closer the first period is to the decision time.

Present bias is proven to be a multiply determined phenomenon with at least three set of distinct drivers. The first set of processes focus on visceral, affective, and motivational accounts, suggesting that impulsiveness and impatience are the main drivers of present bias (e.g., Rachlin and Raineri 1992). For instance, the presence of sexual cues increases present bias (Kim and Zauberman 2013), and while introducing a waiting period (Dai and Fishbach 2013) or increasing connectedness to one’s future self (Bartels and Urminsky 2011; Ersner-Hershfield, Wimmer, and Knutson 2009) reduces present bias, outcomes that increase (decrease) affective responses decrease (increase) present bias. Other research has taken a cognitive perspective, arguing that cognitive processes might be sufficient to lead to present biased preferences (Rubinstein 2003). For instance, cognitively representing the outcome more concretely (Malkoc and Zauberman 2006), having a more localized processing (Malkoc et al. 2010) or having less perceived slack in the future (Zauberman and Lynch 2005) can amplify present bias. Finally, perceptions of time have also been shown to be responsible for present-biased preferences. That is, individuals’ time perception does not follow a linear, but a hyperbolic, pattern consistent with psychophysical phenomena (Stevens 1957) and, accounting for the non-linear perception of time (Zauberman et al. 2009) or drawing people’s attention to time (Ebert and Prelec 2007) reduces or even eliminates present bias.

Regardless of the processes behind it, present bias has been found to be very robust when studied among adult humans (Malkoc and Zauberman 2006), preschool children (Mischel, Shoda, and Peake 1988), sophisticated participants with formal training in finance (Shelley 1993) and even lower animals (e.g., Calvert, Green, and Myerson 2011). Finally, hypothetical nature of
the scenarios does not provide a limitation as the effect replicates with real outcomes (Kirby and Hernstein 1995). Despite this reported robustness, research has also established that framing of the discounting task matters. In particular, present bias is diminished if the discounting task is framed as an interest rate (vs. dollar amounts; Read, Frederick, and Scholten 2013), the delay period as a future date (Read et al. 2005), or the deferral task as an expedition of a future outcome (Malkoc and Zauberman 2006).

However, research to date has mostly studied monetary outcomes, and did not explicitly consider differences among what types of products are being discounted. A key exception studied possible discounting differences for various consumables and found no differences in discounting between beer, candy, and soda (Estle et al. 2007). As such, there clearly is a gap in the literature in understanding discounting for different outcomes. Furthermore, since money is merely a medium to purchase goods and services, it is important to study whether what is being delayed matters in present-biased preferences. Adding to this literature, we examine how two main types of purchases – material and experiential, might differ in the extent to which they are discounted over time.

**MATERIAL GOODS, EXPERIENCES, AND PRESENT BIAS**

Consumers must make decisions about how they are going to spend their money, and the most basic trade-off is between material purchases and experiential purchases (Tully, Hershfield, and Meyvis 2015). While researchers and consumers often discuss this distinction as a dichotomy, in reality it is a continuum, and consumers can easily classify purchases on this continuum (Dunn and Weidman 2015; Guevarra and Howell 2014). As in previous research, we
will examine two ends of the continuum, but it is important to keep in mind that some purchases may fall somewhere in between. A large and growing literature has examined how material and experiential purchases differ and have found that experiences are associated with slower adaptation (Nicolao et al. 2009), less comparison (Carter and Gilovich 2010), more social interaction (Caprariello and Reis 2012), and psychological needs satisfaction and happiness (Howell and Hill 2009; Van Boven and Gilovich 2003).

Most importantly, there is an intertemporal distinction between material and experiential purchases—the number of consumption episodes over which they are consumed. Recent research has found that tradeoffs between material and experiential consumption are in part a function of how long they will last over time (Tully et al. 2015). The costs and benefits of material items are distributed over time, but experiences incur both the benefits and costs in the same time period (Shu and Gneezy 2010). Put differently, while experiences are usually consumed on a single occasion (e.g., a concert or a massage), the utility from material items are extracted through repeated use over time (e.g., a couch or a shoe). We argue that this difference is fundamental in understanding how discounting might differ for material and experiential purchases. When deferring an experiential purchase, consumers consider delaying the single episode over which the entirety of the purchase will be consumed. When deferring a material purchase, however, the outcome is distributed over smaller episodes. Since consumers are known to be insensitive to the time dimension compared to the outcome (Ebert and Prelec 2004), we would expect them to focus only on the more immediate consumption episodes, disregarding the later ones. Put differently, while delaying an experiential purchase will be perceived as moving the entire consumption episode, delaying a material purchase will be perceived as only moving a small fraction of several consumption episodes. Since an equivalent experiential purchase feels larger
than its material counterpart, we predict that consumers will show more impatience that declines steeply with time for experiential (vs. material) purchases.

We should also note that, this prediction is not as straightforward as it might appear at first glance. Based on the literature, it is possible to generate the opposing prediction. Another important distinction between material and experiential is their tangibility (Van Boven and Gilovich 2003). While material items exist in the physical world, experiences live in our minds. Thus, by definition, material items are more concrete and experiences are more abstract. Past research has demonstrated that concreteness (abstraction) at the representation (Malkoc and Zauberman 2006) or at the mindset level (Malkoc et al. 2010) is associated with increased (decreased) present bias. If so, one would expect material items that are more concrete to also demonstrate more present bias than their experiential counterparts. We, however, predict the opposite. Nonetheless, it is an empirical question, which we address next.

**STUDY OVERVIEW**

In a series of five experiments, we examine differences in the way experiential and material purchase are delayed over time. Study 1 served as the initial test of our prediction, where we provided participants with either a material or experiential purchase of $950 and asked them to delay this purchase. In Study 2, we aimed at replicating the effect while allowing participants to generate either a material or experiential purchase. Study 3 was designed to rule out alternative explanations by keeping the purchase itself constant and manipulating whether it is perceived as more material or more experiential. Providing the initial test of our theoretical process, in Study 4 participants generated any purchase, indicated their premium for delaying it,
rated how long they would use this item, and rated this purchase on the material-experiential continuum. Finally, to directly test whether differences in the number of consumption episodes drive the effect, in Study 5, we manipulated the experience to be consumed in one sitting (as is typical with most experiences) or over multiple ones (as typical with most material purchases).

**STUDY 1: DELAYING EXPERIENTIAL AND MATERIAL PURCHASES**

The aim of our first study was to examine whether consumers exhibit less present bias when delaying material purchases compared to experiential purchases. To that end, participants were provided with either a material or an experiential purchase, each worth $950. They were then asked to delay this purchase. We predicted that participants delaying an experiential (vs. material) purchase to show steeper discounting over time and thus more present bias.

**Method and Procedure**

One hundred and seventy-nine undergraduates participated in the study in exchange for course credit. The sample size was chosen out of convenience and with an attempt to maximize the number of participants, given the constraints of the participant pool. The study was a 2 (Purchase Type: Material vs. Experiential) x 3 (Time: 1 week, 1 month, 3 months) mixed design, where time was the repeated factor. The scenarios were adopted from similar delay discounting tasks in previous research (Thaler 1981; Zauberman et al. 2009), where we altered the outcome to be material or experiential.

In the experience condition, participants were given the following scenario: “Imagine that you've recently purchased a new 5 days vacation to go on with a friend. You've been really looking forward to the vacation, as you will see new and different sights. The total cost of the
vacation was $950. You are supposed to go on the vacation in a week, but then the tour agency offers to pay you money to delay the vacation. Delaying the vacation won't be a problem with work and/or school.” The material condition was analogous to the experience condition except for the outcome, and it was worded as follows: “Imagine that you've recently ordered a new couch for your apartment. You've been really looking forward to the couch, as it is super comfortable and really ties the apartment together. The total cost of the couch was $950. The couch is supposed to arrive in a week, but then the furniture store offers to pay you money to delay the arrival of the couch. Delaying the delivery of the couch won't be a problem with work and/or school.” In both conditions, participants indicated the smallest amount of money they would be willing to accept to delay the vacation/couch one week, one month, and 3 months.

**Results**

To analyze the results, we first calculated monthly premiums by dividing the amount indicated by the length of delay (in months). Since we had an opened ended question (participants could provide any number), we had a natural problem with outliers. For example, while the average response to a one-month delay was $539, with a median of $300, three people had responses above $4,000, with one person demanding $6,000. To determine whether outliers were having a significant effect on the results, we used the studentized residuals method recommended by McClelland (2000). Of the 179 participants, three were more than two standard deviations beyond the mean residual and were thus removed from the analyses, leaving us with 176 total observations.

Replicating previous work, results showed a strong present bias ($F(1,175) = 52.71, p < .001$), where monthly premiums in 1 week ($M = 912.32$) were higher than monthly premiums in 1 month ($M = 523.62; F(1,174) = 49.58, p < .001$), and monthly premiums in 1 month were
higher than monthly premiums in 3 months (M = 164.13; F(1,174) = 34.63, p < .001). In addition, the results showed a main effect for purchase type, indicating that participants in the experiential condition (M = 980.44) required higher premiums to delay than those in the material condition (M = 269.63; F(1,174) = 30.20, p < .001).

Most importantly, and in line with our predictions, we observed a significant time by outcome type interaction (F(1,174) = 28.75, p < .001), indicating that the present bias was stronger for the experience (M_{1week} = 1,479.04, M_{1month} = 803.49, M_{3months} = 658.78; F(1,89) = 43.99, p < .001) than the material condition (M_{1week} = 349.26, M_{1month} = 255.29, M_{3months} = 204.34; F(1,85) = 16.55, p < .001). In other words, participants in the experience (vs. material) condition not only showed larger discounting rates, but these discount rates also decreased faster over time (see Figure 1). Note however that participants who were delaying experiential and material purchases both showed present bias, albeit to varying extents.

**FIGURE 1**

Study 1: Time horizon by outcome type interaction.

Monthly Premiums for Delaying $950 Purchase
**Discussion**

Supporting our predictions, results of Study 1 show that consumers display more present bias when delaying experiences than material purchases. Put differently, when asked to delay an experience, consumers are not only more impatient than delaying equivalent material purchases, but also show a sharp decline in their impatience as the time horizon gets longer. These results are especially noteworthy because they indicate that experiences, despite being more abstract, led participants to show more impatience and present bias.

However, Study 1 has a few limitations. First, participants were provided with the material and experiential purchase to delay. While this method keeps the product constant within a condition, it also introduces a potential confound. Though we informed participants that both purchases were $950, we could argue that people value a vacation more than a couch, which led to greater discount rate (i.e., main effect). Similarly, one could argue that the present bias for the experiential purchase is driven by the fact that it is merely more desirable or attractive. Thus, to address this potential confound, in the next study we allow participants to generate their own purchases for a set amount of money, a procedure that commonly used in the material-experiential literature.

**STUDY 2: SELF-GENERATED MATERIAL-EXPERIENTIAL PURCHASE**

**Method and Procedure**

The study was a 2 (Purchase Type: Material vs. Experiential) x 3 (Time: 1 week, 1 month, 3 months) between subjects design. Accounting for the large number of between subjects cells, we aimed for 400 participants. To that end, 411 Amazon Mechanical Turk (MTurk)
workers (mean age = 32.7, 63% male, five no responses, and one “other/prefer not to answer”) participated in the study, with 402 completing every question (see Goodman, Cryder and Cheema 2013 for a discussion on the validity of using MTurk samples to study intertemporal preferences).

Participants in all of the conditions were asked to imagine making a $1,000 purchase. Those in the experiential (material) condition were asked to generate an experiential (material) purchase. We defined a material-experiential purchase based on prior work (Van Boven and Gilovich 2003). Participants in the experiential purchase condition received the following instructions: “Imagine that you’ve recently been given about $1,000 to spend on an experience of your choice. By experience we mean a purchase that is intangible (you can’t touch it) and that you buy with the intention of acquiring an experience. The only requirement is that you buy an experience--you can't save it or use it to pay off debt.” After indicated what they would purchase, they indicated the least amount of money they would be willing to accept to delay the purchase one week, one month, or three months, depending on the time condition. The material condition was the same as the experiential one, except that it asked participants to generate an experiential purchase and provided the definition of a material purchase (“…a purchase that is tangible (you can touch it) and that you buy with the intention of acquiring a material good”).

To rule out potential alternative explanations, we also asked a serious of questions at the end. Specifically, participants indicated how excited, disappointed (to give up the purchase), concerned about regret, look back, curiosity, worry, or concern that others would receive more money for the delay. Finally, as an instructional check, we asked participants to rate their purchase as more material (1) or more experiential (7). Participants that did not follow instructions (i.e., those who were instructed to provide a material good but then said it was an
experience (rated above the midpoint), or vice versa) were removed, leaving 371 total participants. Finally, we collected gender and age, and any comments.

**Results**

As in Study 1, we first calculated monthly premiums for each condition and determined whether outliers had a significant effect using the studentized residuals. Of the 371 participants, 21 were more than two standard deviations beyond the mean residual and were thus removed from the analyses, leaving us with 350 total observations.

Replicating the results of Study 1, we again found a main effect for time ($F(1,346) = 24.12, p < .001$), showing that monthly premiums in 1 week ($M = 926.93$) were higher than in the monthly premiums 1 month ($M = 424.57$; $F(1,346) = 25.76, p < .001$), and the monthly premiums in 1 month were marginally higher than the monthly premiums in 3 months ($M = 248.98$; $F(1,346) = 3.12, p = .078$). Similarly, we replicated the main effect of outcome type ($F(2,346) = 29.75, p < .001$), demonstrating that participants in the experiential condition ($M = 756.28$) required higher premiums to delay than those in the material condition ($M = 310.70$).

Most importantly, and in line with our predictions, we observed a significant time by outcome type interaction ($F(2,346) = 12.92, p < .001$), indicating that the present bias was stronger for the experience ($M_{\text{1 week}} = 1,444.79$, $M_{\text{1 month}} = 496.23$, $M_{\text{3 months}} = 327.83$; $F(1,189) = 24.95, p < .001$), than the material condition ($M_{\text{1 week}} = 409.07$, $M_{\text{1 month}} = 352.91$, $M_{\text{3 months}} = 170.13$; $F(1,196) = 5.43, p < .01$). In sum, while participants in both conditions displayed present bias, those in the experiential condition showed significantly stronger present bias than those in the material condition (see Figure 2).
Study 2: Time horizon by outcome type interaction, using self-generated material and experiential purchases.

We also collected several measures to rule out alternative explanations (excited, disappointed (to give up the purchase), concerned about regret, look back, curiosity, worry, or concern that others would receive more money for the delay). None of these measures showed a significant purchase type by time interaction ($p$’s > .15), except “look back” ($p = .055$, “Will you look back?”). However, the responses to the look back question were not correlated with participants discounting responses ($r = .02, p > .6$) and thus cannot explain the results.

**Discussion**

Replicating Study 1, in Study 2 we find that consumers are more present biased when making an experiential purchase than a material purchase. This effect is above and beyond the fact that experiences led to greater discount rates overall. In other words, once again we find more evidence that consumers delaying an experiential (vs. material) purchase show a steeper decline in discounting.
One limitation of Study 2 is that it required participants to either recall a material or experiential purchases, which introduces a huge variation in the products that are then delayed over time. We argue that our effect is not product specific and is due to important psychological differences that are evoked by consideration of material and experiential purchases (and not some other third correlated dimension, such as the hedonic nature of the purchases). To isolate this effect even further, in the next study we keep the product constant and manipulate the framing of a purchase as either more experiential or more material. Study 3 will also use a different time period (days), instead of weeks and months, to test for any boundary conditions.

**STUDY 3: KEEPING THE PURCHASE CONSTANT**

The boundary between material and experiential purchases is naturally fuzzy, yet consumers, students, and broad audiences tend to understand the distinction quite well (Dunn and Weidman 2015). Yet, one benefit of this fuzziness is the ability to keep the actual purchase constant and manipulate whether participants think about it in more material or experiential terms. In Study 3 we employ this approach, holding the actual purchase constant and manipulating how the purchase is framed (as more material or more experiential). This control allows us to rule out alternative explanations and provide evidence that it is in fact the material-experiential distinction driving our results.

**Method and Procedure**

Three hundred one MTurk workers participated in the study, with 296 completing every question (57% male, one no response, and one “other/prefer not to answer”, age was not collected). The study was a 2 (Purchase Type Priming: Material vs. Experiential) x 2 (Time: 3
vs. 10 days) mixed design, where time was the repeated factor. All of the participants were asked to imagine that they had just purchased a new high quality large screen 3-D television. To manipulate purchase type, we adapted a manipulation from Rosenzweig and Gilovich (2012) that asked participants to focus either on the material aspects or the experiential nature of a television. In the material condition, we asked participants “to take a minute to think about what that would be like. Close your eyes and think about where the TV would go in your apartment/home, and how well it would go with your other things (e.g., couch, decor, etc.).” In the experience condition, we asked participants “to take a minute to think about what that would be like. Close your eyes and think about what it would be like to watch television in a whole new way, and how it would fit with other activities.” They had 30 seconds to think before being allowed to continue.

Next participants completed the same delay discounting task, which asked the smallest amount they were willing to accept to delay the delivery of the purchase by 3 days and 10 days (within-subject). Participants were then asked whether they understood the questions (yes, not really, no), their television viewing frequency (average hours of television watched per day), gender, and education level. Five participants that did not confirm that they understood the questions were removed from the analysis, leaving us with a total of 291 participants. Finally, participants completed the 10-item Material Values Scale (Richins 2004) to rule out the possibility that our effect is driven by or interact with differences in innate materialism.

**Results**

As before, we first calculated daily premiums and determined whether there were any outliers that had a significant effect on the results. Twenty participants had studentized residuals that were more than two standard deviations beyond the mean and were thus removed from the analyses, leaving us with 271 total observations.
Replicating our previous results, we again found a main effect for time (F(1,269) = 142.35, \( p < .001 \)), showing that daily premiums in 3 days (\( M = 14.76 \)) were higher than daily premiums in 10 days (\( M = 10.68 \)). There was no main effect for product type (F(1,269) < 1), possibly because the product was kept constant across material and experiential conditions. Most importantly, however, the analysis showed a purchase type by time interaction (F(1,269) = 3.82, \( p = .053 \)), consistent with our previous studies. Participants exhibited more present bias in the experiential (\( M_{3\text{days}} = 15.38, M_{10\text{days}} = 10.68; F(1,269) = 93.90, p < .001 \)) than in the material condition (\( M_{3\text{days}} = 14.14, M_{10\text{days}} = 10.68; F(1,269) = 50.69, p < .001, \) see Figure 3).

To rule out the possibility that our results are due to priming of materialism or limited to those not high in materialism, we added the material values scale to our analysis, along with an interaction term with purchase type. No significant interaction emerged (\( p > .5 \)), nor was there a main effect (\( p > .9 \)). Furthermore, our results were also not moderated by high or low frequency TV users (\( p > .5 \)).

**FIGURE 3**

Study 3: Time horizon by outcome type interaction, while keeping the outcome constant
Discussion

In Study 3 we replicated the experiential-material purchase asymmetry in present bias. These results are noteworthy as this study kept the product constant and simply varied the framing of this product as more material or more experiential. As such, alternative accounts that center around differential value for material and experiential purchases cannot account for the differences in present bias. Furthermore, we find that consumers’ materialism does not factor into how impatient they are with the receipt of their material or experiential purchases. Taken together, the results support our predictions and rule alternative accounts.

Results of this study, while compelling, lack external validity. Consumers do not often make a purchase and alter their frame of thinking. Instead, they often make purchases that would be considered fuzzy on the material-experiential continuum and do not give this dimension much thought. In the next study, we wanted to examine such situations, where participants make a purchase and indicate their delay premium (using a delivery scenario) without drawing their attention to the material-experiential nature of the purchase. Instead, we adopt a measurement approach, asking participants to rate the extent to which a purchase is either material or experiential after the deferral task.

**STUDY 4: NAME YOUR OWN PURCHASE**

Study 4 examines whether experiences lead to more present bias when consumers are unrestricted in their spending and allowed to their own interpretation of what is an experience
and what is a material purchase. We also aim to provide evidence for our theoretical process by examining whether consumers view material purchases as being consumed over a longer period of time than experiential purchases.

**Method and Procedure**

Three hundred and one MTurk workers participated in the study, with 300 completing every question (mean age = 30.9, 66% male, one no responses, and three “other/prefer not to answer”). Since material-experience factor was measured and time was manipulated within subjects, we aimed for only 300 participants.

Participants were informed that they had received $1,000 and were asked to indicate how they would spend the money. As in Study 2, the only stipulation was that they had to spend the money—they could not save it or use it to pay off debt. After indicated what they would purchase, they completed the same delay discounting task as in previous studies, which asked the least they were willing to accept to delay the delivery of the purchase by 3 days and 10 days (within-subject). After responding, participants rated the purchase as more material or more experiential (1=Definitely More Material, 6=Definitely More Experiential). Participants were then asked whether they understood the questions (yes, not really, no), and how long it would take to consume their purchase (very short time to very long time). Twenty participants that did not confirm that they understood the questions were removed from the analysis, leaving us with a total of 280 participants. Finally, we collected gender, age, and any comments.

**Results & Discussion**

As in Study 3, we first calculated daily premiums and examined outliers. Of the 280 participants, one was more than two standard deviations beyond the mean and was thus removed from the analyses, leaving us with 279 total observations.
Replicating our previous results, we found a main effect for time (i.e., present bias), showing that daily premiums in 3 days (M = 36.52) were higher than the daily premiums in 10 days (M = 24.29; F(1,277) = 64.67, p < .001). Once again, we also found a main effect of outcome type, consumers required higher premiums to delay experiential purchases than material purchases (b = 7.34, SE = 1.47, t(277) = 5.00, p < .001).

Most importantly, this effect was moderated by participants material-experiential ratings: Participants exhibited more present bias as purchases were rated more experiential versus material (b = 2.86, SE = .74, t(277) = 3.77, p < .001, see Figure 4). The results provide further support that consumers are more patient and show more consistent discount rates with material purchases compared to experiential purchases.

**FIGURE 4**

Study 4: The extent of present bias as a function of the material-experiential ratings of the outcome

![Figure 4: Present Bias When Delaying a New Purchase (self-generated)](image)
Also consistent with our theorization, participants indicated that material purchases would take more time to consume than experiential purchases \( (b = 6.74, SE = .94, t(279) = 7.18, p < .001) \). Note, however, that this consumption time measure is an imperfect proxy for our proposed process, which is centered on the consumption taking place in a singular versus multiple episodes. While the number of consumption episodes and the length of consumption are closely related, they are nonetheless distinct. To that end, in the next study we will manipulate the number of consumption episodes directly and test whether it mitigates present bias.

**STUDY 5: SINGLE VS. MULTIPLE EPISODES**

In Study 5 we aimed to directly manipulate the number of consumption episodes and examine its effect on the level of present bias. In doing so, we used only experiential purchases. As previously discussed, experiential purchases are predominantly associated with consumption in a single episode. Our theory suggests that, if an equivalent experience were to take place over multiple episodes (e.g., a day long class took place instead over multiple shorter classes), then it would alter what consumers perceive is being delayed and decrease the extent of present bias. To that end, we manipulated the experience to be consumed in either a single or multiple episodes.

**Method and Procedure**

Four hundred one MTurk workers participated in the study (63% male and one “other/prefer not to answer”, age was not collected). Given that we did not know a priori the potential effect size of our manipulation, we increased our sample size to 400. Fourteen participants indicated not understanding the questions and thus were removed, leaving us with 386 participants.
The study was a 2 (Consumption Episode: Single vs. Multiple) x 2 (Time: 1 month vs. 3 months) mixed design, where time was the repeated factor. Participants were asked to imagine that they were looking to take a class to learn a new hobby. They were provided with a list of hobbies (cooking, rock climbing, ballroom dancing, knitting, painting, carpentry, mobile app programming, and photography) and were asked to choose which class they would like to take.

In the single-episode experience condition, the class was a day-long (6 hour) class that ran for a single day this weekend and fit into their schedule. In the multiple-episode experience condition, the class was an hour-long and ran for 6 weeks starting this weekend and fit into their schedule.

Next participants completed a delay discounting task where they were informed that, “As you check out for your [class], the website says that it only has a few spots left. Thus, they make you an offer to save you money by delaying the start of the classes. They make you two offers: Offer A: One Month. They will pay you to wait 1 month to start your classes. What is the smallest amount of money you would want in order to delay your classes 1 month? Offer B: Three Months. They will pay you to wait 3 months to start your classes. What is the smallest amount of money you would want in order to delay your class 3 months?”

**Results**

We first calculated monthly premiums for each participant. As before, we next examined the outliers and found that 11 participants were more than two standard deviations beyond the mean residual and were thus removed from the analyses, leaving us with 375 total observations.

A 2 (time) x 2 (number of consumption episodes) ANOVA did not produce a significant main effect for time or the number of consumption episodes (F(1,373) < 1). Importantly however, we found the expected significant interaction (F(1,373) = 4.53, p < .05). Participants exhibited present bias when the experience was consumed in a single episode, like a traditional
experience ($M_{1\text{month}} = 43.13$, $M_{3\text{months}} = 39.71$; $F(1,373) = 4.54$, $p < .05$), but did not show any present bias when the experience was consumed over multiple episodes, like a traditional material purchase ($M_{1\text{month}} = 44.69$, $M_{3\text{months}} = 46.21$; SE = 1.72, $F(1,373) < 1$, $p > .3$, Figure 5).

**FIGURE 5**

Study 5: The effect of single versus multiple consumption episodes on present bias.

![Monthly Premium to Delay Class Depending on Experience Length](image)

**Monthly Premium to Delay Class Depending on Experience Length**

- **Multiple Consumption Episodes**
- **Single Consumption Episode**

**Discussion**

In a direct test of our process, Study 5 provides evidence that consumers are more present biased for experiences because they are consumed over a single episode compared to material purchases, which are usually consumed over multiple episodes. By manipulating the number of episodes of an experience, we were able to decrease the extent of present bias in an experience—mirroring the effect of a material purchase.

This study also rules out scheduling as an alternative explanation, as one could argue that experiences are more difficult to reschedule. The study rules out scheduling by holding it
constant—both conditions were experiential and would require rescheduling. Moreover, the multiple consumption episode condition would require more rescheduling than the single episode (i.e., reschedule 4 days vs. 1 day), which would predict the opposite results of what we found. Thus, the results do not support a scheduling explanation.

**GENERAL DISCUSSION**

Almost every consumer decision involves an intertemporal tradeoff between having (material) or doing (experience) now, or delaying these benefits until later. For instance, consumers can pay for faster delivery for an online product purchase or receive compensation for rebooking a flight to a later time. While a wealth of literature has shown that consumers (along with most of our friends in the animal kingdom) are impatient and demonstrate present-biased preferences (a.k.a. hyperbolic discounting; Berns et al. 2007; Calvert et al. 2011; Frederick et al. 2002; Thaler 1981; Zauberman et al. 2011), most of the work has focused on monetary outcomes, implicitly assuming that how and where the money will be spent is irrelevant. We questioned this assumption and found a systematic limitation to present bias, and in the process we identified a simple way for consumers to mitigate their intertemporal biases. We proposed and provided evidence that material and experiential purchases are distinctly different in the way they are discounted. We further found that this difference is rooted in the number of consumption episodes over which material and experiential purchases are consumed. While experiences are one-time events (e.g., a concert or a massage), material purchases are usually held over multiple consumption episodes with small amounts of utility extracted over time (e.g., a couch or a shoe). Therefore, consumers perceive delaying an experiential purchase as changing the entire
consumption, whereas delaying a material purchase is shifting perhaps only one or two consumption episodes. For example, delaying a one-week vacation by a week require shifting the entire vacation, but delaying the delivery of a new grill by a week requires shifting only the first few uses of the grill over a long lifetime.

Across five studies we provided consistent evidence for our effect and its psychological process. Study 1 provided an initial test of our theory and found that participants indicated not only a higher discount rate overall for experiential (vs. material) purchases, but the discount rate decreases more over time (i.e., more present-biased) in the experiential purchase condition compared to the material purchase condition. In Study 2 (and 4) participants generated their own purchases and showed the same results: Participants required higher discount rates for experiences and were more present biased when making experiential purchases. In Study 3 we kept the purchase itself constant (a 3D television) and manipulated whether it was perceived as more material or more experiential to rule out alternative explanations. Once again, experiential purchases exhibited more present bias, suggesting that it is the material-experiential distinction that is driving our effect. To provide external validity and rule out alternative explanations, Study 4 asked participants to generate any purchase and then rate those purchases as material or experiential only after completing a delay discounting task. As expected, they rated more present-biased purchases as more experiential and lasting longer. Finally, we tested our psychological process in Study 5 by manipulating whether an experience is consumed over a single episode (as is typical with most experiences) or over multiple ones (as typical with most material purchases). As expected, we find that once experiences are distributed over multiple consumption episodes, consumers’ preferences are less present biased.

**Contribution and Implications**
Our findings provide several important theoretical and practical contributions. First and foremost, we contribute to the intertemporal choice literature by demonstrating that the type of outcomes used when studying present bias systematically alters the amount and the rate of discounting over time. Our results demonstrate that consumers’ discount rates, at both the individual and aggregate level are context and purchase specific, and they do not have one single discount rate. Thus, our results provide caution for (over) generalizing findings using monetary amounts to other domains. Perhaps more importantly, for the most common purchases in consumers’ life (material items), we find significantly reduced present bias, which at times disappears. This suggests the possibility that the overwhelming evidence for present bias, most of which is obtained using monetary outcomes, might be overestimating its magnitude.

Our results are also important for both analytical and empirical researchers modeling consumer choice over time and making assumptions about an appropriate discount factor or function (e.g., dynamic discrete choice models that allow for intertemporal tradeoffs; Bronnenberg et al. 2008; Dube et al. 2015). While our results show that the problem is perhaps less parsimonious than previously thought, we do provide some guidance as to when consumers might show smaller discount rates and when discount rates are more consistent over time.

The findings provide several important contributions to the experiential-material purchase literature as well. First, the studies begin to investigate differences in the anticipatory value of material and experiential purchases, a topic that has been noticeably absent in the literature as most research has focused on only the consequences (Dunn and Weidman 2015; for a recent exception see Tully et al. 2015). Second, the results identify an instance when material items evoke a more desired pattern of preference (i.e., time consistence or less present bias) than experiential ones. While material goods and materialism usually have negative associations with
consumer happiness and well-being (see Shrum et al. 2014 for some exceptions), it is important to identify some of the potential advantages to material goods. After all, consumers continue to pursue material goods despite the advantages to experiences.

Our results are also informative as to how consumers mentally represent material and experiential purchases. In our studies we found that material (vs. experiential) purchases lead to less present bias; however, a prediction based on mental representations of the event might have made the opposite prediction. That is, another definitional difference between material and experiential purchases is their tangibility, where material purchases are more tangible and concrete, and experiences are more intangible and abstract. Given that past research has demonstrated concrete (vs. abstract) outcomes to be discounted more steeply over time (Malkoc and Zauberman 2006; Malkoc et al. 2010), one could easily predict material (vs. experiential) items to also exhibit more present bias. We, however, found the opposite pattern, supporting the notion that it is not tangibility, but number of consumption episodes that drives the differences in delay premiums. This finding also suggests that the experiential-material purchase itself is not directly associated with how concretely the purchase is represented. Instead, concreteness is related to the psychological representation of an outcomes and not physical tangibility.

From a policy standpoint, the findings provide some suggestions for helping consumers make more rational decisions and avoid the pitfalls association with present bias. For one, focusing on material purchases that last over several consumption episodes can reduce their bias and lead to more patient consumers. For example, distributing products or resources over time (e.g., food distributions, subscribe-and-save marketing strategies, lump-sum vs. installment payments) not only helps consumers with budgeting, but it creates a greater willingness to wait for greater discounts. While we cannot say that such policies would lead to a more patient
consumer overall, our results are consistent with such a notion. Given that consumers spend a considerable amount of money on material purchases (both discretionary and non-discretionary utilitarian items), the present bias as we have studied in the past may not be so dysfunctional in terms of consumer welfare. Thus, the good news—for consumers at least—is that consumers may not be as present-biased as we first thought.
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