The Material-Experiential Asymmetry in Discounting: When Experiential Purchases Lead to More Impatience

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CONTRIBUTION STATEMENT

Our findings contribute to two literatures traditionally viewed as distinct: intertemporal choice and material-experiential purchases. For the intertemporal choice literature, the findings demonstrate that consumers discount money differently depending on whether it is spent on a material or experiential purchase. Prior research predominantly used dollar amounts in studying the extent of discounting, as well as its drivers. We systematically examine how, when, and why differences in the way money is spent influences discounting and impatience. We identify a novel factor that systematically drives this impatience: the duration over which a purchase is consumed, which we term utility duration. Since experiences and material goods often have different utility duration, we find systematic discounting differences. This result helps explain why some research found vastly differently discount rates across consumer product categories, particularly in quantitative modeling and product adoption that focused on durable (i.e., material) goods (Dube, Hitsch, and Jindal 2015; Yao et al. 2012). In suggesting that pricing strategies for material goods do not always apply to experiences, our results have important implications for pricing literature as well. In terms of the experiential-material purchase literature, we identify utility duration as a previously unexamined difference between material experiential purchases that has important implications. Despite the fact that material goods usually have negative associations (e.g., materialism, overspending), we find evidence of an instance in which material purchases have a more desired pattern of preference (i.e., more patience/lower discounting) than experiential purchases. In sum, our research provides important contributions to the intertemporal choice, pricing, choice modeling, and material-experiential literatures.

ABSTRACT

Consumers routinely make decisions about the timing of their consumption, making tradeoffs between consuming now or later. Most of the literature examining impatience considers monetary outcomes (i.e., delaying dollars), implicitly assuming that how the money is spent does not systematically alter impatience levels and patterns. The authors propose an impatience asymmetry for material and experiential purchases based on utility duration. Five studies provide evidence that consumers are more impatient towards experiential purchases compared to material purchases and that this increased impatience is driven by whether the value is extracted over a shorter utility duration (often associated with experiential purchases) or a longer utility duration (often associated with material purchases). Thus, when an experience is consumed over a longer period of time, the results show that impatience can be diminished. Additional results show that the effect holds in both delay and expedite frames and suggest that the results cannot be explained by differences in scheduling, time sensitivity, affect, ownership, future time perspective, or future connectedness.

KEYWORDS: impatience; present bias; material versus experiential purchases; consuming over time
Consumers routinely make decisions about the timing of their consumption. In doing so, they decide whether, and how long, they are willing to wait to forgo an immediate outcome. Generally speaking, consumers are impatient: they prefer sooner outcomes to later ones, even if the later outcome is more desirable. Among other things, this pattern of behavior has implications for how much money consumers are willing to accept to receive a later shipment or how much they are willing to pay to have something sooner.

This pattern of behavior has been studied extensively and is referred to as impatience or high rates of discounting\(^1\) (for reviews see Berns, Laibson, and Loewenstein 2007; Frederick, Loewenstein, and O'Donoghue 2002; Malkoc and Zauberger, 2019; Urmsnky and Zauberger 2014). Consumer impatience has important consequences for several consumer-relevant domains, such as actual saving behavior (Laibson 1997), financial management (Choi, Laibson, and Madrian 2011), obesity and smoking (Khwaja, Silverman, and Sloan 2007; Richards and Hamilton 2012), and happiness and well-being (Schnitker 2012). Thus, understanding when and why consumers are impatient and when they would be willing to forgo immediate benefits has important implications for not only marketers, but for consumer well-being and public policy.

Yet, almost all of the research on how consumers perceive and delay purchases over time (a.k.a., intertemporal preferences) has focused on monetary outcomes, with the implicit (and sometimes explicit, see Landsberger 1971\(^2\)) assumption that how the money will be spent is irrelevant to discounting and impatience (for exceptions, see Estle et al. 2007; Lowenstein 1987). This choice is highly justifiable—money is used to purchase goods and services. It is also

\(^{1}\) Research uses the terms impatience, high levels of discounting, and steep discounting interchangeably to refer to the phenomenon of consumers requiring a large amount of money to delay a present outcome. We adopt the same terminology and use these interchangeably.

\(^{2}\) “The discount rate is independent of the category of consumption goods for which it is calculated” (Landsberger 1971, p. 1351).
convenient—monetary outcomes allow for simplification and value standardization. However, given the myriad of different purchases consumers can make, this assumption might be an oversimplification.

In this paper, we challenge this assumption and examine whether consumers show different levels of impatience for material and experiential purchases. We propose that (1) there are systematic differences in impatience based on whether consumers are delaying experiential or material purchases, and (2) the distribution of utility over time, which we term utility duration, is a critical difference between material and experiential purchases that drives impatience.

Across fives studies we provide support for our predictions above and beyond key alternative accounts (e.g., differences in scheduling difficulty, time sensitivity, affect, future connectedness).

In the pages to follow, we develop our conceptual framework and generate hypotheses, report results from five studies testing our theory, and discuss their implications. Our findings contribute to the literature in several ways. First, we demonstrate a new intertemporal choice anomaly wherein discounting levels depend on how consumers spend their money (i.e., experiences vs. material items). Second, we identify utility duration as a new driver of impatience, which can help explain why some research has found vastly differently discount rates, particularly in quantitative modeling and product adoption (Dube, Hitsch, and Jindal 2015; Yao et al. 2012). Third, we also contribute to the experiential-material purchase literature by identifying one of the few instances when material items evoke a more desired pattern of preference (i.e., more patience/lower discounting) than experiential purchases. Finally, our findings introduce an important tool that can reduce impatience and can be used to design interventions to curb consumer impatience.
EXPERIENTIAL VERSUS MATERIAL PURCHASES

Experiential and material purchases differ in several ways. At one end of this continuum are material purchases, which are tangible and purchased with the intention of acquiring a physical good; on the other end are experiential purchases, which are events that one lives through, purchased with the intention of acquiring an experience (Gilovich, Kumar, and Jampol 2015; Nicolao, Irwin, and Goodman 2009; Van Boven and Gilovich 2003). While this is a continuum, researchers often dichotomized it into material and experiential purchases as consumers can easily distinguish between them (Gilovich et al. 2015; Nicolao et al. 2009; Pham 2015; Van Boven and Gilovich 2003). The distinction has produced several meaningful psychological differences and has been valuable in understanding underpinnings of consumers spending of time and money (Pham 2015). For example, compared to material purchases, experiential purchases not only lead to more happiness (Van Boven and Gilovich 2003), but they tend to be more social (Caprariello and Reis 2012), less comparable (Carter and Gilovich 2010), more central to one’s identity (Carter and Gilovich 2012), more slowly adapted to (Nicolao et al. 2009), and less preferred to give as gifts (Goodman and Lim 2018).

An important, and previously understudied, difference between material and experiential purchases is their consumption pattern over time, or what we call utility duration. Most material items provide smaller amounts of utility over an extended period of time, while the utility from an experiential purchase is extracted over a more intense, but shorter period of time (Shu and Gneezy 2010; Weidman and Dunn 2016). In line with this, consumers find material purchases more attractive when they are concerned about the longevity of the purchase (Tully, Hershfield, and Meyvis 2015), and they are more likely to choose material items over experiences when they
are considering durability (Goodman, Malkoc, and Stephenson 2016). Further supporting this notion, a study tracking momentary happiness found that experiences led to less frequent but more intense happiness, while material purchases led to more frequent but less intense happiness (Weidman and Dunn 2016). Thus, most material goods (e.g., a vinyl record or a massager) have a longer utility duration, while most experiences (e.g., a concert or a massage) tend to have a shorter utility duration. Importantly, we propose that this difference in utility duration between material and experiential purchases has important consequences for consumers’ levels of impatience.

It is also important to note that while material goods are almost always long lived (otherwise they turn into an experience, such as a meal or renting a Ferrari for a day), there are a few exceptions where experiences can last longer. For example, a massage could last one hour or a consumer could purchase a massage membership package; going to the zoo could be a one-time event or the consumer could purchase an annual membership. For simplicity, we focus on the common cases where experiences tend to provide utility over a shorter duration compared to most material goods. However, we later turn to these unique cases to provide a direct test of the relationship between utility duration and impatience.

PURCHASE TYPE AND IMPATIENCE

While consumers generally show high discounting, several factors mitigate or exacerbate impatience (for recent reviews see Malkoc and Zauberman 2019; Urminsky and Zauberman 2014). Relevant for our work, there is accumulating evidence for resource specific discounting. For instance, time is discounted more heavily than money – a difference attributed to consumers’
perceived levels of future slack for time and money (Zauberman and Lynch 2005). Affect-rich outcomes are also discounted more heavily than money (Vallacher 1993), presumably because of increased arousal (Kim and Zauberman 2013; Loewenstein 1996). Closely related to our investigation, consumers show more impatience towards consumable (e.g., food, cigarettes) and non-consumable products (e.g., books, laptops) than money (Urminskey 2018). However, a comparison of various consumables revealed no differences in discounting between beer, candy, and soda (Estle et al. 2007). Thus, it is not apparent if experiential and material purchases would be discounted differently. Furthermore, there is no framework to make predictions about which resources will be discounted more heavily. We propose that utility duration, a factor previously not examined in this literature, has important implications for consumer impatience and will lead to systematic difference in discounting of material items and experiences.

Experiential purchases, like a concert, are often consumed in a single intense episode and delaying them requires consumers to mentally move the consumption of this single episode to a later point in time. Conversely, material purchases, like an LP player, consist of multiple and smaller episodes spread across time. Thus, delaying a material purchase necessitates moving each of the episodes into the future. The question then is whether consumers discount these future episodes differently than the single sooner episode. Based on the psychophysics of time and discounting (Takahashi 2005; Zauberman et al. 2009), we predict that experiences consumed in a single episode will be discounted more heavily than material items that are consumed over smaller episodes over time.

When consumers think about outcomes in the future, their perceived distance to each outcome does not follow a linear pattern (e.g., one year does not feel four times as long as three months). Instead, time perception is contracted such that the perceived duration difference
between two points in time is shorter as the outcomes are moved into the future (e.g., one year feels more like 4.06 months; Zauberman et al. 2009). Importantly, discounting follows a similar pattern, flattening out as the time horizon lengthens. As an outcome, consumers are less sensitive to distal delays than to proximal ones. Compared to experiences, material goods have more episodes dispensed to distal periods. Since these distal outcomes are less painful to delay, we predict that consumers will show lower impatience for material items, compared to experiences.

Furthermore, since this asymmetry is driven by how purchases are consumed over time (i.e., utility duration), we predict an important moderator to test our mechanism—the utility duration of an experience. Experiences tend to be high in intensity but short in duration. However, as previously noted, it is possible (though relatively less common) for an experience to be consumed over a longer period of time (e.g., museum membership) and possess a longer utility duration. Thus, we predict that when an experience has a longer utility duration (i.e., is consumed over a longer period of time), consumers will exhibit more patience compared to a shorter utility duration experience.

An Alternative Hypothesis. We should also note that this prediction is not as straightforward as it might appear, and it is possible to generate the opposing prediction based on different literature. Another important distinction between material and experiential purchases is their tangibility (Goodman et al. 2016; Van Boven and Gilovich 2003). While material items exist in the physical world, experiences are ephemeral. Thus, material items might appear more concrete than experiences, and past research has demonstrated that concreteness—at either the representation (Malkoc and Zauberman 2006) or mindset level (Malkoc et al. 2010)—is associated with increased discounting compared to abstraction. Based on this reasoning, one might expect material items, which are more concrete, to demonstrate steeper discounting than
their experiential counterparts. We, however, predict the opposite because (a) we know of no empirical evidence that material purchases are in fact represented more concretely (and/or associated with more concrete mental representation/processing) than experiences, and (b) material purchases may actually lead to abstract representation/processing because of their long-lasting, durable nature. In the pages that follow, we will test whether consumers are more impatient towards material goods (which would support a mindset explanation) or less impatient, which would support our utility duration theory.

**STUDY SUMMARY**

In a series of five experiments, we test our hypotheses, rule out alternative explanations, and consistently find an asymmetry when delaying experiential purchases compared to material purchase. Study 1 (sports event vs. sports apparel) finds that participants made a greater number of impatient choices when delaying an experiential purchase versus a material purchase. Study 2 rules out an important alternative explanation—rescheduling difficulty—using an expedite frame. Study 3 (movie vs. book) and study 4 (massage vs. massager) replicates the core effect with consequential choices and with two different elicitation techniques. These studies also measure and control for a host of alternative accounts. Finally, study 5 tests our process by manipulating utility duration. In sum, the studies find consistent evidence using different experimental procedures, using consequential choice designs, and across several product categories—categories that are consumed both alone and with others, hedonic and utilitarian, and scheduled and un-scheduled.
STUDY 1: DELAYING EXPERIENTIAL AND MATERIAL PURCHASES

Method and Procedure

Three hundred and two undergraduates from a large public US university participated in the experiment (M_{age} = 20.5; 46\% male, 81\% native English speakers) in exchange for extra credit in their introductory marketing course. As in all of our studies, we determined the sample size by maximizing the number of participants given the constraints of the participant pool, and we report all responses and all questions/measures collected in the study.

To compare impatience towards material items and experiences, we matched two purchases that belong to the same general category and were relevant to this population pool of college students: ticket to a sporting event and a jersey/apparel. Further, a pre-test showed that the apparel (M = 4.70, SE = .11) was significantly more attractive than the sporting event (M = 3.89, SE = .12, t(260) = 5.90, p < .001). This makes our test more conservative. If participants were to be impatient towards more attractive purchases, one would expect the jersey (material item) to lead to more impatience than the sporting ticket. However, we predict the opposite.

We asked participants to imagine that their favorite uncle recently surprised them with a gift. In the material condition, the gift was “a jersey/apparel of your favorite athlete,” and in the experience condition the gift was “a ticket to go see a sporting event.” Both purchases were set to arrive/take place the next weekend.

Next, participants were introduced to the delay situation: “The next day, you receive an email informing you that there was a mix-up in the computer system and the jersey/apparel was oversold [stadium was overbooked]. The [ticketing] website is looking for volunteers to trade receipt of their jersey [tickets for a game/match] for a week [featuring the team/player] in
exchange for a monetary compensation. In each scenario below, choose whether you would
prefer to receive the jersey/apparel [tickets] this weekend OR prefer to delay its receipt [going to
the game/match] by a week and receive the compensation indicated.”

Participants then completed a standard choice-based delay-discounting task (Bartels and
Urminsky 2011). There were 10 pairwise choices, ranging from $0 to $18 in $2 increments.
Thus, our main variable of interest was the number of impatient choices (e.g., going to the game
this week instead of delaying it and receiving $X). Eight participants indicated that they would
prefer to wait for $0 than have it this week, suggesting that they did not understand the question
or had negative discount rates; however, removing them from the analysis does not significantly
change the results.

Next, participants answered questions designed to rule out two potential alternative
explanations—rescheduling difficulty and time sensitivity. Experiences are harder to reschedule
and are often more time sensitive. If so, they might explain our results. If rescheduling the
sporting event is more difficult than rescheduling the delivery of the jersey, then this concern
should result in an unwillingness to change the date for the sporting event. In our data, this
would present itself as more impatient choices for the sporting event. To gauge concern about
scheduling we asked, “How concerned were you about the difficulty in rescheduling going to the
match?” on a 7-point scale (1=not concerned at all, 7=very concerned). Similarly, if participants
believe that attending a sporting event is more time sensitive than receiving the jersey, then time
sensitivity could also explain participants’ unwillingness to delay the experience (for monetary
compensation). To gauge concern about time sensitivity we asked, “Some things are more time
sensitive: For example, Valentine's Day dinner is not the same if it is a month after Valentine's
Day. In this scenario, how time sensitive was the arrival/delivery of this [purchase]?” on a 7-point scale (1=not time sensitive, 7=very time sensitive).

**Results and Discussion**

As we hypothesized, the results show that participants made more impatient choices when delaying the experience (M = 6.61, SE = .24) compared to delaying the material good (M = 4.71, SE = .24; b = .95, t(300) = 5.78, p < .001, η² = .10). We also conducted analyses controlling for time sensitivity and rescheduling difficulty and found that the effect of material-experiential purchase on impatient choices remained significant as our dependent measure (b = .76, t(298) = 4.81, p < .001; see Appendix B for further statistical details).

The results of study 1 suggest that consumers are more impatient towards experiences than comparable material goods. However, the study also has its limitations. First, the design of the study may have led participants to infer that a later game might be inferior or less convenient because plans had already been made to attend a sooner game. Though we did find that scheduling predicted impatience, we also found that the effect of purchase type did hold above and beyond this effect of scheduling. Nonetheless, our measure may not have picked up all the possible variance or accurately tapped into these different potential alternative accounts. We address this issue in the next study by testing the effect in an expedite frame (i.e., paying to move something to a sooner date/delivery), providing more information, and using a different vignette.

**STUDY 2: EXPEDITING EXPERIENTIAL AND MATERIAL PURCHASES**
To help address rescheduling difficulty as an alternative account, in study 2 we altered the discounting task from a deferral to an expedite scenario. An expedite task asks participants how much they would be willing to pay to have a purchase sooner, unlike a delay task that asks participants how much they would be willing to receive to have a purchase later. Importantly, in an expedite scenario, when participants make impatient choices, they are opting to reschedule. Thus, if we observe higher impatience for experiences, our results cannot be attributable to differences in scheduling difficulty. An expedite task is an especially conservative test for our theory because overall consumers are less impatient when expediting than delaying an outcome (Malkoc and Zauberman 2006), which will make it harder to find our asymmetry effect. Accordingly, we expect a smaller effect overall, but nonetheless a significant difference.

Finally, in study 2 we also added three new questions to address two other potential alternative explanations—feelings of ownership and involvement. It is possible that once consumers have made a purchase, they feel like they already own a material item. If so, a consumer might be more patient to obtain a material good because they feel like they (mentally) already own it. Further, it is possible for experiential purchases to be more involving than material purchases, which could also be responsible for the asymmetry. We used a measurement approach to address these alternative accounts.

**Method and Procedure**

We recruited participants from Amazon Mechanical Turk (MTurk). Our goal was to increase our sample size to 300 (from 200 in study 1) because expedite frames can decrease discounting overall (Malkoc and Zauberman 2006). However, due to an administrative error, we
ended up collecting 708 participants (50.4% male, US only, 95% approval or higher). We included all participants in the analysis.

The method and procedure was similar to study 1, with a few changes (see Appendix A for full stimuli). Participants imagined that they had made the focal purchase themselves (i.e., it was not a gift as in study 1). They also imagined having plans to go to the game (or receive the jersey) next month but had an opportunity to go to the game (or receive the jersey) this weekend for an additional fee. We also explicitly stated that, “The two games are expected to be equally good and both times are equally convenient for you.” They were then asked to, “choose whether you would prefer to pay the amount indicated to receive the tickets now and go this weekend or prefer to delay going to the game/match to next month.” They responded to 11 pairwise choices that varied from $0 to $20 in $2 increments.

Next, we asked five questions to address four alternative accounts: time sensitivity, rescheduling difficulty, ownership, and involvement. We measured rescheduling difficulty in the same fashion as study 1. Time sensitivity used the same scale as study 1, but a slightly different question: “Some purchase decisions are time-sensitive. For example, delaying a flight to a wedding is not useful if you miss the wedding. Or delaying delivery of a tux is not useful if it arrives after the wedding. How time-sensitive was your decision to delay receiving this [purchase]?” Ownership was measured by asking two questions on 7-point scales (1=totally disagree, 7=totally agree): “I feel like I already have ownership of this product [experience]” and “I feel like my purchase is already mine, even though I have not received [experienced] it yet.” Finally, we measured involvement by asking, “How interested are you in athletics and/or sports?” (1=not very interested, 7=very interested).
Results

Once again, we found that participants made more impatient choices for the experience (M = 4.60, SE = .15) compared to the material good (M = 3.66, SE = .15; b = .54, t(702) = 4.32, p < .001, η² = .03). Note that in the expedite scenario we used, when participants choose the sooner option, they also chose to reschedule their purchase, suggesting that rescheduling difficulty is an unlikely alternative explanation. As in study 1, we also conducted analyses controlling for our alternative account measures and found that the effect of material-experiential purchase on impatient choices remained significant (b = .53, t(696) = 5.00, p < .001; see Appendix B for further details).

Discussion

The results of study 2 further support our hypothesis and address several potential alternative explanations. Study 2 used an expedite frame and found participants were willing to pay more money to expedite an experience than a material purchase, even though impatience meant an increase in rescheduling costs. Though this study suggests our results are unlikely due to concerns about timing or rescheduling difficulty, we control for this issue (experimentally and statistically) in future studies. For time sensitivity, we once again found a direct effect on impatience. We also found evidence for involvement and endowment influencing impatience; however, and more importantly, we find the significant effect of purchase type above and beyond these factors.

We also conducted additional robustness checks (details of these studies can be found in the Web Appendix). To control for differences in perceived monetary value, in the first study (Web Appendix A), we allowed participants to generate their own material or experiential purchase for a predetermined dollar amount (between subjects) and then asked participants their
willingness to accept to delay this purchase. Consistent with studies 1 and 2, participants displayed higher discounting when delaying an experience than a material purchase. In a slight variation, in another study (Web Appendix B) we allowed participants to indicate what they would purchase with a predetermined amount of money and asked them to self-rate the purchase as more material or more experiential. Consistent with our theory, consumers demanded more compensation for purchases that they themselves rated as more experiential. In a third study (Web Appendix C), we examined whether the effect is robust to using hedonic and utilitarian product categories. We manipulated whether a material-experiential purchase has a hedonic (relaxation) or a utilitarian (physical therapy) purpose and measured impatience. Consistent with research in the domain of hedonic consumption (for a review, see Alba and Williams 2013), we found no relationship between hedonic consumption and impatience/discounting and our effect replicated in both hedonic and utilitarian conditions. Finally, we tested the robustness of our effect to experiences that are consumed in private or public by directly manipulating this factor (Web Appendix D). Once again, we found that material-experiential asymmetry holds for both types of purchases. The results of the first two studies and those in the Web Appendix provide consistent support for our proposed effect in hypothetical domains. Next, we turn to an experiment with more consequential decisions.

STUDY 3: CONSEQUENTIAL CHOICES AND WILLINGNESS-TO-ACCEPT

Our primary goal in study 3 was to test our hypothesis in a different paradigm in which participants made choices with potentially real outcomes, while using a new measure of impatience, willingness-to-accept (WTA). In an attempt to equate material and experiential
purchases as much as possible, we chose two comparable purchases: movies (an experience) and books (a material good). Books and movies have several differences, so we matched them as much as possible in a few key ways. First, we chose movies and books because they are very similar in content and price except that a physical book has a tangible element that lasts longer, a key component in our utility duration theory. Next, we chose four new releases (to ensure participants had not yet seen the movies) and four books that were either based on those movies or vice versa. Lastly, a pretest found that these books (M = 3.96) and movies (M = 3.82) did not differ in attractiveness (t(99) < 1).

A secondary goal of this study was to address several alternative accounts. We measured time perception, affect, and future time perspective, in addition to rescheduling difficulty and ownership. A time perception account proposes that participants’ duration estimates between the sooner and later dates play a role in our scenarios. Since consumers’ perceptions of time are also hyperbolic (Zauber et al., 2009), it is possible that participants in the experience condition perceive the time between the current and delayed outcome longer than the material condition. An affect account proposes that experiential purchases could be more affect-rich. To the extent that participants show more impatience towards affect-rich options, one could expect affect to drive impatience results. Finally, a future time perspective (FTP; Lang and Carstensen 2002) account proposes that if participants view the future to be less expansive in the experiential condition than the material condition, then they might behave more impatiently, which could account for our results.

Method and Procedure
We recruited 200 Amazon Mechanical Turk (MTurk) workers (56% male, US only, 95% approval or higher) and 201 participated in the study with 187 answering every question (see Goodman, Cryder, and Cheema 2013 for a discussion on the validity of using MTurk samples to study intertemporal preferences).

Participants in the experience condition were presented with four movies scheduled for nationwide release during the upcoming weekend: Hickok, War for the Planet of the Apes, Lady Macbeth, and Swallows and Amazons. The material condition consisted of four books based on the same topic or story: They Called Him Wild Bill, War for the Planet of the Apes, Lady Macbeth of Mtsensk, and Swallows and Amazons. Each book/movie option consisted of the title and a one-paragraph description of the book/movie (see Appendix for the full stimuli). We asked participants to choose one book/movie out of the possible four books/movies to be delivered/viewed this weekend. We informed participants that five participants would be randomly chosen to receive the book/movie ticket that they chose. In the movie condition, they would be emailed an e-ticket. In the book condition, they would pick up their book from an Amazon locker. This allowed us to avoid asking participants for their physical addresses. We conducted the study using MTurk participants via TurkPrime and limited our sample to those living in areas with high concentrations of Amazon lockers.

After participants made their choice, we informed them that, “due to demand issues, we may need to delay your delivery/viewing date until a later time. How much are you willing to accept to delay the book/movie by two weeks? In other words, what is the least amount of money you are willing to accept to delay receiving your book/movie by two weeks?” To decrease the influence of outliers, we limited responses to under $100.
Next, we asked five questions to address five alternative accounts, two of which (rescheduling difficulty and ownership) were measured in the same fashion as previous studies and three of which were new (time perception, affect, and future time perspective). We measured time perception on a 100-point slider scale by asking, “How long does the time between this weekend and two weeks feel like?” (0 = very short, 100 = very long; adapted from Zauberman et al. 2009). We captured affect by combining two statements measuring excitement (“I’m excited for this book/movie”) and disappointment (“I would be disappointed if I had to give up this book” (reverse scored)) on 7-point scales, where 1 = totally disagree and 7 = totally agree. Finally, we measured future time perspective (FTP) using its scale (Lang and Carstensen 2002), whereby participants indicate whether they thought 10 statements were “very true” (7) or “very untrue” (1), such as “Many opportunities await me in the future,” “There is plenty of time left in my life to make new plans,” and “I have the sense that time is running out” (reverse scored).

**Results and Discussion**

Despite efforts to reduce outliers, the WTA measure was still skewed. The mean response was $7.53 with a standard error of $.77 and a median of $5.00. To test for outliers, we conducted a Grubbs’ test, an iterative analysis of the data that identified 11 outliers—five in the experiential and six in the material condition. We analyzed the data both with and without these observations to ensure that our results were not driven by outliers.

Consistent with our previous studies, participants delaying the experience demanded more money to delay the purchase for two weeks (M = $7.07, SE = .57) than those delaying the material good (M = $3.68, SE = .64; b = 1.69, t(187) = 3.96, p < .001). If we include the 11 outliers, the effect size increases and remains significant, but with considerably more variance
(M = $9.22, SE = 1.03 vs. M = $5.52, SE = 1.12; b = 1.85, t(198) = 2.43, p = .016). As in our previous studies, we also conducted analyses controlling for alternative accounts and found that the effect of material-experiential purchase on WTA remained significant (b = 1.63, t(168) = 3.94, p < .001; see Appendix B for further details).

The results of study 3 replicate our previous findings using a consequential choices and willingness-to-accept measure. We found that participants demanded more money (almost double in our study) to delay an experience compared to a similar material good. This effect remained while controlling for a host of alternative explanations. Thus, the results further support our hypothesis that consumers are more impatient towards experiential purchases compared to material purchases. While we made every attempt to choose comparable material and experiential purchases (i.e., movies that had not yet been released and were based on books with similar attractiveness), we should acknowledge differences between delaying watching a movie that will be released versus receiving a book. The next two studies address these issues by comparing two similar purchases (a massage and a massager) and experimentally manipulating our utility duration construct.

**STUDY 4: PRE-SCHEDULED CHOICES**

The goal of study 4 was to further test our hypothesis while holding scheduling constant. We did this using a new product category, massage/massager, and asked all participants to schedule in advance when they would receive their material or experiential purchase (in both the present and delayed options). The experience condition described a one-hour massage therapy session and the material condition described a back/neck massager. Both the massage and the
massager tend to be consumed in private, which helps address the possibility that our effects are driven by the greater social nature associated with many experiences (Caprariello and Reis 2012). As in study 3, we again used a consequential choice design. Finally, we used a pairwise choice paradigm to minimize the outliers we observed in study 3.

**Method and Procedure**

One hundred ninety-seven undergraduate from a mid-sized private US university participated in exchange for course credit. The material condition described a back/neck massager and the experience condition described a one-hour massage therapy session. We provided participants the following cover story: “More and more studies demonstrate how important it is to lead a relaxed lifestyle and how a relaxed mind is intricately connected to a relaxed body. One of the best ways to achieve this is through massages. To that end, at the end of each day, we will be randomly selecting a participant to receive a back/neck massager [one-hour massage therapy session in a nearby location]. If selected to receive the massager [the massage session], you can schedule it starting tomorrow (Feb, 3rd) morning.” Following these instructions, we asked participants to indicate what time/day they would like to pick up their massager (or to schedule their massage), if they were selected to receive it. All participants selected a day/time within the next week (Wednesday, Feb 3rd, to Thursday, Feb 9th).

Next, we informed participants about the possibility of a delay, “As you might imagine, it might not be possible to provide all the massagers [massage therapy sessions] next week. If this will be the case with your massager [massage therapy session], we might ask you to delay the receipt of your massager [massage session] by ONE week. Under these circumstances, we would be compensating you for your inconvenience. Note that, if you are chosen to receive the
massage therapy, one of your below choices will materialize. For instance, if you chose to “delay the massage therapy and receive $5,” you will get your massage therapy with a delay (at a day/time of your choosing as you will indicate below), along with your $5 compensation.” Participants then indicated their preferred day/time to pick up their massager (or schedule their massage) during the following week (i.e., Wednesday, Feb 10th, to Thursday, Feb 16th).

Similar to our previous studies, participants then made a series of ten pairwise choices, indicating preference between receiving their massager/massage this week or next week for an additional compensation. The compensation varied from $0 to $45 in $5 increments. Thus, our main variable of interest was the number of impatient choices (i.e., receive the massage/massager this week or wait a week and receive $X).

Finally, we measured rescheduling difficulty and time sensitivity as we did in previous studies, as well as future self-connectedness. Self-connectedness to the future has been shown to decrease impatience (Ersner-Hershfield et al. 2009). If participants in the material condition feel more connected to their future self, this can account for our effects. We measured the degree to which a person feels connected to their future self with two questions. They both used 100-point slider scales, one with overlapping circles (question 1: 1 = I will be completely different in the future to 100 = I will be completely the same in the future; question 2: overlapping circles where 100 = completely connected, and non-overlapping circles where 0 = completely disconnected (adapted from Ersner-Hershfield et al. 2009)). At the end of each day, we randomly selected one participant and honored a randomly selected choice from among the ten they made.

**Results and Discussion**
Consistent with our previous studies, participants who considered delaying the experience made significantly more impatient choices (M = 2.28, SE = .15) than those who considered delaying a material item (M = 1.69, SE = .16; b = .29, t(186) = 2.66, p = .008). It is important to note that the means for this study was exceptionally low compared to our other studies. We reason that this is due to miscalibration: we used a large range of compensation amounts with large intervals. Since participants could receive up to $45 with $5 increments, many of our participants switched to patient choices quickly. Importantly, despite this large increment, we still observed a significant difference between material and experiential conditions. Another concern with low means is their susceptibility to outliers. That is, just a few people in the experiential condition choosing $45 might cause a reliable difference. To test whether this was the case, we again conducted a Grubbs’ test, which identified four outliers—three in the experiential and one in the material condition. We reran the analyses excluding these four observations and still observed a significant difference between material (M = 1.63; SE = .11) and experiential (M = 2.09; SE = .14) conditions (b = .23, t(182) = 2.49, p = .014).

These results again replicate our effect and address several alternative explanations. First, the study used a consequential choice design, demonstrating that we cannot simply attribute the findings to the hypothetical nature of our earlier studies. Second, the study holds scheduling constant by requiring all participants to explicitly schedule both the sooner and the later delivery for both the experience and material purchase. Since all participants stated what day/time they would receive/engage in with this product/experience, it is not possible for any differences and/or difficulty from scheduling to account for our results. Finally, this study controlled for the social nature of the products being delayed. Experiences tend to be more social than material goods (Caprariello and Reis 2012), but this study used solitary stimuli in both conditions.
(massagers and a massage therapy) and replicated the findings, suggesting that the social nature of experiences cannot be responsible for the results.

**STUDY 5: UTILITY DURATION**

Thus far, the studies have consistently demonstrated a material-experiential asymmetry in impatience/discounting, while ruling out several alternative accounts. In study 5 we turn to providing direct evidence for our conceptual framework. We proposed that this asymmetry between material and experiential purchases is driven by utility duration—the duration over which a purchase is consumed. We suggest that most experiences have shorter utility duration compared to material purchases, which then leads to higher levels of impatience for experiential purchases. Thus, if a given experience has a longer utility duration, (e.g., one-year membership to a local attraction), we would expect impatience levels similar to material purchase. To test this prediction, we added a third condition, where participants delayed an experience with longer utility duration.

**Method and Procedure**

We recruited 300 MTurk workers to participate in the study; a total of 307 responded and 300 answered every question (gender = 47% male, M_{age} = 39.87, US only, 95% approval or higher). The design of the study was similar to study 4, but it had an additional condition and participants did not actually receive their purchases due to logistical constraints. Thus, we had three conditions: material, experience short, and experience long. The material (massager) and experience short (one-hour massage) conditions were the same as in study 4. The new condition,
experience long, was a membership for weekly HydroMassage sessions (15 minute each). As before, we also reminded participants that, “Delaying the membership won't be a problem with work and/or school. In other words, scheduling is not an issue if you decide to start your membership at a later point in time.”

Similar to our previous studies, participants then made a series of ten pairwise choices, indicating preference between receiving their massager/massage/membership this week or next week in exchange for additional compensation. The compensation varied from $0 to $18 in $2 increments. Finally, as in our previous studies, we measured several alternatives using the same measures as in our previous studies. We measured perception of time, rescheduling difficulty, affect, involvement, and the future time perspective scale (Lang and Carstensen 2002).

**Results**

Consistent with our previous studies, we found that impatience varied across our conditions (F(2,304) = 7.35, p < .001, η² = .05, see Figure 1). Replicating our previous studies, participants made significantly more impatient choices with the short experience (M = 7.19, SE = .27) than the material good (M = 5.72, SE = .29; t(304) = 3.73, p < .001). In addition, utility duration also played a key role: participants made significantly more impatient choices when delaying the short experience (M = 7.19, SE = .27) than the long experience (M = 6.22, SE = .30; t(304) = 2.44, p = .015).

To test our hypothesis more directly, we analyzed our data using orthogonal contrast codes. We created one contrast code to test utility duration, which compares the short experience condition to the long experience and material conditions. A second contrast code compared the long experience to the material condition. As expected, the utility duration contrast was
significant (b = .41, t(304) = 3.63, p < .001) but the second contrast code was not (b = -.25, 
t(304) = 1.18, p = .237). As in our previous studies, we also conducted analyses controlling for 
several alternative accounts and found that the effect of duration remained significant (b = .24, 
t(285) = 2.21, p = .028; see Appendix B for further details).

FIGURE 1

Purchase Type and Duration on Impatience

Discussion

By manipulating the utility duration of an experiential purchase, study 5 provides direct 
evidence for our proposed conceptual framework. We hypothesized that consumers are more 
impatient with experiential purchases compared to material goods because the utility duration of 
experiences is shorter. As such, delaying an experience means deferring most, if not all, of its 
value into the future. In contrast, the utility from material purchases is derived over longer 
durations and their deferral into the future delays a smaller part of their value, thus leading to 
lower discounting and more patience. Thus, once we elongated the utility duration of an
experience and made it more similar to a material good (e.g., a massage membership), there was no longer a significant difference between this and the material condition.

The results of all of the studies also provide evidence against several alternatives. The results do not support a scheduling explanation because a long experience should require the same scheduling as a short experience, suggesting the same or more impatience; however, we found that a long experience led to less impatience. We also found that our results held while controlling for several alternative explanations. Thus, the results from these analyses across all studies consistently show that the effect of purchase type on impatience cannot be explained by differences in scheduling, time sensitivity, affect, ownership, future time perspective, or future connectedness. The details of these analyses from each study can be found in Appendix B.

GENERAL DISCUSSION

In this manuscript, we challenge a long-standing implicit assumption in the intertemporal choice literature. When studying discounting, most of the work on intertemporal choice used monetary outcomes, implicitly assuming that how and where the money will be spent is irrelevant. We questioned this assumption and found a systematic asymmetry in impatience for material and experiential purchases. In doing so, we isolated utility duration—the duration over which a purchase is consumed—as an important driver of consumer impatience. While experiences are often one-time events (e.g., a concert or a massage), material purchases are usually consumed over a longer duration, with small amounts of utility extracted over time (e.g., a couch or a shoe). This fact, combined with consumers’ tendency to display declining rates of discounting with time (e.g., Thaler 1981; Zauberman et al. 2009), leads shorter duration
experiential purchases to be discounted more steeply than material purchases whose consumption episodes span out into the future. For example, when delaying a concert, consumers discount the deferral of this single episode very steeply. But, when delaying the receipt of a vinyl record, consumers behave as if they are delaying each episode separately and do so with decreasing impatience for outcomes further out into the future.

Across five studies, we provided consistent evidence for the material-experiential asymmetry in impatience and its psychological underpinnings. Study 1 provided an initial test of our theory and found that participants delaying experiential purchases (ticket to a sporting event) showed significantly more impatience than those delaying material purchases (sports jersey/apparel). Study 2 ruled out an important alternative explanation: delaying necessitates rescheduling and experiences are harder to reschedule. To rule this out, in study 2 we used an expedite frame (i.e., willingness to pay to receive the purchase sooner). We again found that consumers made more impatient choices, despite impatient choices increasing the likelihood of rescheduling.

Studies 3 and 4 used consequential choices, while also using different elicitation methods, and again found more impatience for experiences than material purchase. This is especially important as recent research has shown that different discounting elicitation methods can be driven by different psychological processes (Lee, Malkoc, and Rucker 2018). Finally, in study 5 we provided direct support for our theoretical account by showing consumers discount an experience that has a long utility duration similarly to a material purchase and significantly lower than an experience with short utility duration.

**Alternative Accounts**
Across all five studies, we addressed several alternative accounts through both statistical and experimental controls. We found evidence against several alternative accounts: scheduling difficulty, time sensitivity, perceived endowment, affect, time perceptions, involvement, future time perspective, and future connectedness. As one would expect, some of these factors often predict impatience, suggesting that we successfully measured the constructs. However, when we statistically control for these explanations, the material-experiential asymmetry always remains significant. Taken together, we find strong evidence for the material-experiential asymmetry by examining different elicitation methods, three different sets of stimuli, experiences consumed alone and socially, more or less hedonic purchases, and consequential decisions. While we ruled out all the accounts that we could generate, nevertheless, future research may want to explore other potential mechanisms that may also contribute to the asymmetry.

Future research may also want to explore whether this decision process becomes automatic over time, as consumers learn about utility duration. That is, it is possible that consumers use some sort of durability-delay heuristic when deciding whether to delay. We would still expect that this heuristic was learned through consumers’ focus on delaying the present based on durability, what we call utility duration. Nonetheless, if this becomes an automatic process, it raises the potential for misapplication to some contexts.

It is important to note that remembered utility is unlikely to drive our results. Our proposed psychological theory, which is based on experienced utility, makes the same predictions if we incorporate remembered utility as well. Remembered utility diminishes over time, and experiences will have more intense remembered utility immediately after consumption than a material good. Material goods, on the other hand, have remembered utility that is spread

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3 We thank an anonymous reviewer for this suggestion.
out more over time (Goodman et al., 2016). Thus, as long as the duration of remembered utility is spread out more over time for a material good than an experience, then the same logic for experienced utility holds for remembered utility. Nonetheless, exceptions are possible. For example, extraordinary experiences (which are, by definition, not common experiential purchases) that may have low experienced utility (e.g., an ultramarathon, a Tough Mudder race, or a doctoral student on the job market), may have increasing positive remembered utility for some people (e.g., a student who finds a job despite the pain of the process).

Our results are also unlikely to be driven by differences in construal or concreteness (Trope and Liberman 2010). In fact, it is possible to make two opposing predictions based on construal level theory. First, it is possible that consumers represent material goods more concretely than experience because they are more tangible. Alternatively, if consumers more vividly imagine experiences, it is possible for experiences to have more concrete representations. Since concreteness is associated with more impatience (Malkoc and Zauberman 2006), depending which type of purchase is more concrete, one could make opposing predictions. The two studies reported in the Web Appendix also suggest that the relationship is likely complex. We find that while one of the studies shows no effect of material-experiential distinction on concreteness (Web Appendix Study D), the other one finds a marginal effect (Web Appendix Study C). Note that even if the data consistently demonstrated that experiences are indeed more concrete, we would argue that utility duration is responsible for this effect. Experiences taking place over a short period of time (and materials over a long and often uncertain future) would drive concrete representations of experiences (and abstract representations of material goods) – and not the other way around. Nonetheless, and importantly, when we control for concreteness in our studies, our effect remains significant.
We should note that discounting and present bias are complex and multiply determined phenomena, and there are many factors that contribute to why people will feel impatient towards some purchases but want to savor others. Thus, while the current theory holds in general, it is quite possible that there are other important moderating circumstances in the environment. For instance, we may not find a difference in impatience when savoring is extremely strong, such as storing an expensive bottle of champagne or waiting for a kiss from your favorite movie star (Loewenstein 1987). We should also note that our goal was not to introduce a comprehensive account that will encompass all factors affecting consumer impatience. Instead, our goal was to isolate one instance of divergence in discount rates (material vs. experiential purchases, which are driven by utility duration) and try to use this difference to better understand the roots of impatience.

**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 systematically alters the amount of discounting observed. Our results demonstrate that consumers’ discount rates, at both the individual and aggregate level, are context and purchase specific. Thus, our results provide caution for (over)generalizing findings using monetary amounts to other domains. Further, we uncover utility duration as an important driver of discounting and impatience. This finding has important implications for understanding intertemporal decisions, which has mostly focused on understanding timing decisions for a lump sum amount.
Second, our results are important for both analytical and empirical researchers modeling consumer choice over time and researchers making assumptions about appropriate discount factors/functions (e.g., dynamic discrete choice models that allow for intertemporal tradeoffs; Bronnenberg et al. 2008; Dube et al. 2015; and dynamic structural models, Yao et al. 2012). Our results suggest that instances of higher, as well as hyperbolic-like, discounting could be predicted when utility duration is incorporated into these models. Our extension of the classical discounted utility model allows for differences in consumption patterns over time, and future research might prove more reliable if it explicitly incorporates utility duration into utility functions.

Third, our findings provide several important contributions to the experiential-material purchase literature. These studies investigate differences in the anticipatory utility of material and experiential purchases, a topic that has received less attention than the consequences of material and experiential consumption (Dunn and Weidman 2015; Kumar and Gilovich 2016). A notable exception is Kumar et al. (2014), who found that consumers can gain utility by waiting in lines for experiences, perhaps because it is viewed as part of the experience and/or increases savoring utility (Loewenstein 1987). A key difference between this and our research is when the waiting takes place. Consumers wait in line after they initiate the process of engaging in an experience. However, our research examines delays in the timing of the experience in terms of weeks or months. Taken together, the research may help understand how consumers can be impatient to go on vacation, but then willingly (and happily?) wait two hours in a line at Disney World to enjoy a two-minute ride. Future research could also explore whether consumers are correctly predicting their enjoyment in these situations.

In addition, our results identify an instance when material items evoke a more desired pattern of preference (i.e., more patience) than experiential ones. While material goods and
materialism usually have negative associations with consumer happiness and well-being (Pieters 2014; but see Shrum et al. 2014), it is important to identify some of the potential advantages to material goods. After all, consumers continue to pursue material goods despite research showing the advantages to experiences. Our research adds to the recent research in identifying such patterns (Goodman and Lim 2018). Future research should explore other advantages to material purchases in addition to more patience.

Finally, our results suggest that firms may benefit from using different pricing strategies for material items and experiences. For example, financial firms usually price financial products based on supply (i.e., current interest rates) and a consumers’ individual risk. In doing so, they assume that how consumers spend the money is irrelevant (the exception being when the purchase also serves of collateral). This is consistent with recent work showing that consumers are more likely to go into debt when purchasing experiences than material goods (Tully and Sharma 2017). This is an important consideration for credit card companies. Similarly, retailers that sell both material goods and experiences (e.g., REI selling outdoor gear and excursions) may find that a consumer’s willingness to wait for a good may not match their willingness to wait for an experience. Such firms might consider different premiums for faster delivery depending on utility duration.

From a policy standpoint, our findings provide suggestions to help consumers make more rational decisions and avoid the pitfalls associated with impatience and present bias. 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.
REFERENCES


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APPENDIX A: STIMULI DETAILS

Study 2 Stimuli

Material (sports apparel/jersey) Condition

Imagine that you purchased the jersey/apparel of your favorite athlete. The jersey is set to arrive NEXT MONTH.

It is also possible for you to get the jersey THIS WEEKEND, but for an extra fee.

In each scenario below, choose whether you would prefer to pay the amount indicated and receive it by THIS WEEKEND OR prefer to wait and receive the jersey/apparel NEXT MONTH.

Experience (game/match) Condition

Imagine that you have a ticket to go see a sporting event. This game/match features your favorite athlete and will take place NEXT MONTH.

It is also possible for you to go see a similar sporting event THIS WEEKEND, but for an extra fee. The two games are expected to be equally good and both times are equally convenient for you.

In each scenario below, choose whether you would prefer to pay the amount indicated to receive the tickets now and go THIS WEEKEND OR prefer to delay going to the game/match to NEXT MONTH.
Study 3 Stimuli

Material (Books) Condition

_They Called Him Wild Bill: The Life and Adventures of James Butler Hickok_ (by Joseph G. Rosa)

His contemporaries called him Wild Bill, and newspapermen and others made him a legend in his own time. Among western characters only General George Armstrong Custer and Buffalo Bill Cody are as readily recognized by the general public. The author was allowed to work from newly available materials in the possession of the Hickok family and discovered new material pertaining to Wild Bill’s Civil War exploits and his service as a marshal and found the pardon file of his murderer, John McCall. Additional, rare photographs of Wild Bill are published here for the first time. The results is the best biography of Wild Bill likely to be written for years to come.

_War for the Planet of the Apes_ (novelization by Greg Cox)

Caesar and his apes are forced into a deadly conflict with an army of humans led by a ruthless Colonel. After the apes suffer unimaginable losses, Caesar wrestles with his darker instincts and begins his own mythic quest to avenge his kind. As the journey finally brings them face to face, Caesar and the Colonel are pitted against each other in an epic battle that will determine the fate of both their species and the future of the planet.

_Lady Macbeth of Mtsensk and other Short Stories_ (by Nikolai Leskov)

The story of a passionate young woman who escapes her stifling marriage through adultery and murder, Lady Macbeth of Mtsensk is now the basis for an acclaimed new film starring Florence Pugh. Nikolai Leskov is one of the most unique voices of nineteenth-century Russia, with a fascination for idiosyncratic characters, lurid crimes, comic absurdity, spirituality and the joy of pure story. This volume contains five of his greatest short tales, including the matchless masterpiece Lady Macbeth of Mtsensk. Translated with an introduction by David McDuff.

_Swallows and Amazons_ (by Arthur Ransome)

Set in England’s Lake District in the 1930s, Swallows and Amazons is the rollicking story of four young children—John, Susan, Titty and Roger—who embark on an island adventure in their boat, the Swallow. Upon arrival, the friends are besieged by Amazon pirates, Nancy and Peggy, who claim ownership of the land. Luckily, the Swallows and Amazons soon call a truce and set off together on wild escapades, camping under open skies, swimming, fishing, and exploring. This deluxe hardcover edition of Arthur Ransome’s charming tale will find a treasured spot in many home libraries as well as transport children to a real-life Neverland, a fantastical place where they can roam freely without an adult in sight.
Experience (Movie) Condition

**Hickok**

Infamous gunslinger and outlaw "Wild Bill" Hickok (Luke Hemsworth) attempts to escape his past by settling in the small town of Abilene, Kansas. The mayor (Kris Kristofferson), captivated by Wild Bill's unparalleled gun skills, offers him a job as the town marshal. Attempts to protect the town are soon challenged when a band of outlaws threaten Wild Bill and the laws he administered. Among the outlaws are powerful saloon owner Phil Poe (Trace Adkins), whose relationship with Bill's ex-lover (Cameron Richardson) stirs tension. Poe puts a bounty on Wild Bill's head, but Bill sets out to fight the villainous bandits and save Abilene from danger.

**War for the Planet of the Apes**

In the third installment of the Planet of the Apes prequel series -- which depicts the events that led to the primates taking control of Earth -- simian leader Caesar (played via motion capture by Andy Serkis) is horrified when his family are killed during an attack by humans on his community. Caesar soon plots revenge on the Colonel (Woody Harrelson), the human military leader behind the assault, which threatens to ignite all-out war between the two species.

**Lady Macbeth**

In 1865 England, a young woman named Katherine (Florence Pugh) is trapped in a loveless arranged marriage to a much older man (Paul Hilton), and begins a passionate affair with one of the servants on her estate (Cosmo Jarvis). When her husband and father-in-law (Christopher Fairbank) discover their tryst, the lovers resort to deception and murder in order to save their relationship. Based on the novel Lady Macbeth of the Mtsensk District by Nikolai Leskov.

**Swallows and Amazons**

Four children dream of escaping the tedium of a summer holiday with their mother. When finally given permission to camp on their own on an island in the middle of a vast lake, they are overjoyed. But when they get there they discover they may not be alone... The battle for ownership of a lonely island teaches them the skills of survival, the value of friendship and the importance of holding your nerve. Set against the breathtaking backdrop of the Lake District, Swallows and Amazons is a heartwarming adventure for all the family.
APPENDIX B: ADDITIONAL ANALYSIS DETAILS

STUDY 1: ADDITIONAL ANALYSIS DETAILS

We conducted additional analyses by adding measures for each of the two alternative accounts—both separately and jointly—into a regression model with the material-experiential factor as independent variables and the number of impatient choices as our dependent measure. As one might expect, time sensitivity and reschedule difficulty significantly predict participants’ willingness to delay a purchase. However, after their addition to the model (either separately or jointly), we still found that participants made more impatient choices when delaying experiences than material goods (joint model: $b = .76$, $t(298) = 4.81$, $p < .001$; see Table 1).

<table>
<thead>
<tr>
<th>Model</th>
<th>Experiential vs. Material</th>
<th>Time Sensitivity</th>
<th>Reschedule Difficulty</th>
</tr>
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<td>1</td>
<td>0.95**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.87**</td>
<td>0.25**</td>
<td></td>
</tr>
<tr>
<td>3</td>
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<td>0.55**</td>
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<tr>
<td>4</td>
<td>0.76**</td>
<td>0.17*</td>
<td>0.50**</td>
</tr>
</tbody>
</table>

**$p < .01$, *$p < .05$, ^$p < .1

TABLE 1

STUDY 2: ADDITIONAL ANALYSIS DETAILS

We again conducted additional analyses by adding measures for each of the four alternative accounts—both separately and jointly—into a regression model with the material-experiential factor as independent variables and the number of impatient choices as our dependent measure. Once again, these factors did in fact significantly predict participants’ willingness to delay a purchase (see Table 2 for statistics for all models). However, and most important for our purposes, even after any of these control variables were added to the model
(either separately or jointly), we consistently found that participants made more impatient choices for experiences than material goods (joint model: $b = .53$, $t(696) = 5.00$, $p < .001$).

**TABLE 2**

<table>
<thead>
<tr>
<th>Model</th>
<th>Experiential vs. Material</th>
<th>Time Sensitivity</th>
<th>Reschedule Difficulty</th>
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<th>Involvement</th>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>0.53**</td>
<td>0.13^</td>
<td>0.20**</td>
<td>0.13*</td>
<td>0.24**</td>
</tr>
</tbody>
</table>

**p < .01, *p < .05, ^p < .1**

**STUDY 3: ADDITIONAL ANALYSIS DETAILS**

We again conducted additional analyses to address alternative accounts. We conducted a series of regressions, with WTA as the dependent measure and material-experiential and our alternative account measures as independent variables. In each model, we added the measures for one of the five alternative explanations as independent variables, both separately and jointly. Once again, rescheduling difficulty did significantly predict a participant’s WTA amount (see Table 3 for statistics for all models). Similarly, perception of time, ownership, and affect all significantly predicted WTA amounts. Future time perspective, on the other hand, did not significantly predict WTA. Most important for our purposes, when any of these control variables were added to the model (either separately or jointly, model 7 in Table 3), our key effect remained significant: participants demanded more money to delay an experience than a material good (model 7: $b = 1.63$, $t(168) = 3.94$, $p < .001$). And once again, if we include the seven outliers, the effect sizes all increase with the estimates remaining significant, including our key effect (model 7: $b = 1.92$, $t(179) = 2.53$, $p = .012$).
TABLE 3

Coefficients for Experience vs. Material Good on Impatience with and without Control Variables

<table>
<thead>
<tr>
<th>Model</th>
<th>Experiential vs. Material</th>
<th>Perception of Time</th>
<th>Reschedule Difficulty</th>
<th>Ownership</th>
<th>Affect</th>
<th>Future Time Perspective</th>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>1.54**</td>
<td></td>
<td></td>
<td>0.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>1.63**</td>
<td>0.04*</td>
<td>0.69*</td>
<td>0.07</td>
<td>0.17</td>
<td>0.32</td>
</tr>
</tbody>
</table>

*p*.01, *p*.05, ^p.<.1

STUDY 4: ADDITIONAL ANALYSIS DETAILS

Next, we conducted a series of regressions with impatient choices as our dependent measure and the material-experiential variable and each of the four alternative explanations as independent variables, both separately and jointly. Once again, time sensitivity and rescheduling difficulty do in fact significantly predict a participant’s willingness to delay a purchase (see Table 4 for statistics for all models). Future connectedness, on the other hand, did not significantly predict impatience in a consistent manner. However, and most important for our purposes, when any of these control variables were added to the model (either separately or jointly in model 5 in Table 4), our key effect remained significant: participants made more impatient choices when delaying experiences than material goods (model 5: b = .45, t(245) = 2.92, p = .004).
TABLE 4

Coefficients for Experience vs. Material Good on Impatience with and without Control Variables

<table>
<thead>
<tr>
<th>Model</th>
<th>Experiential vs. Material</th>
<th>Reschedule Difficulty</th>
<th>Time Sensitivity</th>
<th>Future Connected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.29**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.28**</td>
<td>0.42**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.37**</td>
<td></td>
<td>0.17**</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.30*</td>
<td>0.37**</td>
<td>0.11^</td>
<td>0.005</td>
</tr>
<tr>
<td>5</td>
<td>0.31**</td>
<td></td>
<td></td>
<td>0.008</td>
</tr>
</tbody>
</table>

STUDY 5: ADDITIONAL ANALYSIS DETAILS

We then conducted a series of regressions with impatient choices as our dependent measure and the contrast codes and each of the alternative explanations as independent variables, both separately and jointly. Once again, as we would expect, some of these variables did in fact predict participants’ impatience (see Table 5 for statistics for all models). However, and most important for our purposes, when any of these control variables are added to our model (either separately or jointly in model 8 in Table 5), our key effect remained significant: participants made more impatient choices when utility duration was short than when it was long (model 9: b = .24, t(285) = 2.21, p = .028).

TABLE 5

Coefficients for Experience vs. Material Good on Impatience with and without Control Variables

<table>
<thead>
<tr>
<th>Model</th>
<th>Duration: Short vs. Long</th>
<th>Perception of Time</th>
<th>Reschedule Difficulty</th>
<th>Ownership</th>
<th>Time Sensitivity</th>
<th>Affect</th>
<th>Involvement</th>
<th>Future Time Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.41**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.35*</td>
<td>0.04**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.39**</td>
<td></td>
<td>0.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.39**</td>
<td></td>
<td></td>
<td>.17^</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0.34**</td>
<td></td>
<td></td>
<td></td>
<td>0.37**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>0.29*</td>
<td></td>
<td></td>
<td></td>
<td>0.48**</td>
<td></td>
<td>-0.31</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>0.41**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>0.38**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>0.24*</td>
<td>0.03**</td>
<td>-0.14</td>
<td>-0.004</td>
<td>0.30**</td>
<td>0.25*</td>
<td>0.04</td>
<td>0.12</td>
</tr>
</tbody>
</table>

**p<.01, *p<.05, ^p<.1
The Material-Experiential Asymmetry in Discounting: When Experiential Purchases Lead to More Impatience

WEB APPENDIX STUDY A

The goal of this study was to examine whether material-experiential asymmetry is robust to using manipulations that are commonly used in this literature. To that end, participants imagine having a certain amount of money and self-generated the material a good or an experience they would purchase (adapted from similar recall and forecasting methods used Caprariello and Reis 2012; Howell and Hill 2009; Nicolao et al. 2009; Pchelin and Howell 2014; Van Boven and Gilovich 2003). This study also used three different time horizons. Finally, we operationalized impatience with a willingness to accept measure (Malkoc and Zauberman 2006).

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. A total of 411 Amazon Mechanical Turk (MTurk) workers (mean age = 32.7; 63.8% male, five non-responses, and one “other/prefer not to answer”) participated in the study, with 402 completing every question. We included all participants in the analyses (see Goodman, Cryder, and Cheema 2013 for a discussion on the validity of using MTurk samples to study intertemporal preferences). We report all conditions and all question in the study.

All participants imagined making a $1,000 purchase and self-generated either an experience or a material good, depending on condition. We defined a material-experiential purchase to participants 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.” The material condition followed the same procedure, where participants were asked to generate a material purchase, defined as “…a purchase that is tangible (you can touch it) and that you buy with the intention of acquiring a material good”.

After indicating what they would purchase, participants completed a standard delay discounting task (e.g., Thaler 1981; Malkoc and Zauberman 2006), where 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).

Next, we asked a series of questions to rule out potential alternative explanations. To test whether increased excitement with experiences can explain our results, participants indicated how excited they were with the purchase and how disappointed they would be to give up the purchase. We also examined anticipated regret as a potential explanation. Participants indicated how concerned they are about regretting their decision and how likely they are to look back. We also measured how worried they were about receiving the outcome in the future, if they had concerns that others would receive more money for the delay (than they would receive), and whether they were curious about the purchase itself. Finally, as an instructional manipulation check, we asked participants to rate their purchase as more material (1) or more experiential (7). Participants that did not follow instructions—defined as 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, age, and any comments.
Results and Discussion

We first calculated a monthly premium for each response (Malkoc and Zauberman 2006) by dividing the dollar amount indicated by the number of months in delay. Thus, the monthly premium was simply the dollar amount demanded divided by 3 in the three-month condition, the exact dollar amount indicated in the one-month condition, and the dollar amount demanded multiplied by 4.333 in the one-week condition.

Since our measure was an open-ended question (participants could provide any dollar amount), we naturally had a problem with outliers. While the median monthly premium was $250, the maximum was $43,330. To identify outliers that had an undue influence on the estimates, we used the studentized residuals method recommended by McClelland (2000). 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 (using a cutoff of three standard deviations, which removes 8 participants, does not change the results).

We conducted an ANOVA, where monthly premium was the dependent variable and purchase type, different time periods, and their interactions were independent variables. In line with our predictions, the results showed a main effect for purchase type: Participants in the experiential condition (M = 756.28) required higher premiums to delay than those in the material condition (M = 310.70; F(1,344) = 29.75, p < .001, η² = .065), supporting the notion that consumers show more impatience for experience than material products (see Web Appendix Figure 1). This main effect remains significant even when we include the 31 participants that did not follow instructions (M = 984.48 vs. M = 349.35; F(1,384) = 7.65, p < .01, η² = .018), use a more conservative outlier cutoff of 3 standard deviations beyond the mean residual (M = 808.91
vs. M = 554.67; F(1,356) = 4.99, $p < .05$, $\eta^2_p = .012$), or include all participants, even those that did not finish the survey (M = 1194.13 vs. M = 637.08; F(1,405) = 5.13, $p < .05$, $\eta^2_p = .013$).

Consistent with previous literature (e.g., Malkoc and Zauberman 2006; Thaler 1981), we also found evidence for a declining rate of discounting with time (F(2,344) = 24.12, $p < .001$, $\eta^2_p = .105$). That is, monthly premiums required by the participants were higher when the delay was 1 week (M = 926.93) than when it was 1 month (M = 424.57; F(1,344) = 25.76, $p < .001$), which was in turn marginally higher than premiums for a 3-month delay (M = 248.98; F(1,344) = 3.12, $p = .078$). We also found a significant time by purchase type interaction (F(2,344) = 12.92, $p < .001$, $\eta^2_p = .056$), indicating that decline in discounting was steeper for the experience condition (M$_{1\text{week}}$ = 1,444.79, M$_{1\text{month}}$ = 496.23, M$_{3\text{months}}$ = 327.83; F(1,189) = 24.95, $p < .001$) compared to the material condition (M$_{1\text{week}}$ = 409.07, M$_{1\text{month}}$ = 352.91, M$_{3\text{months}}$ = 170.13; F(1,196) = 5.43, $p < .01$).

WEB APPENDIX FIGURE 1

Time horizon by outcome type interaction, using self-generated material and experiential purchases.
We then examined the measures collected to rule out alternative explanations (excitement, anticipated regret, concern that others would receive more money for the delay and curiosity). None of the measures were correlated with participants’ discount premiums (p’s from .115 to .650), and thus did not mediate the results (see Web Appendix Table 1).

**WEB APPENDIX TABLE 1**

Analysis of Potential Mediators Predicting Impatience

<table>
<thead>
<tr>
<th>Potential Mediator</th>
<th>Statistic</th>
<th>Covariate (Potential Mediator)</th>
<th>Exp-Mat Purchase</th>
<th>Time</th>
<th>Exp-Mat Purchase x Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Excited</strong></td>
<td>Partial Eta-Sq</td>
<td>0.006</td>
<td>0.075</td>
<td>0.121</td>
<td>0.070</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.156</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Disappointed</strong></td>
<td>Partial Eta-Sq</td>
<td>0.004</td>
<td>0.077</td>
<td>0.125</td>
<td>0.070</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.268</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Regret</strong></td>
<td>Partial Eta-Sq</td>
<td>0.005</td>
<td>0.079</td>
<td>0.127</td>
<td>0.068</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.180</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Look Back</strong></td>
<td>Partial Eta-Sq</td>
<td>0.001</td>
<td>0.077</td>
<td>0.123</td>
<td>0.067</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.525</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Curious</strong></td>
<td>Partial Eta-Sq</td>
<td>0.004</td>
<td>0.078</td>
<td>0.127</td>
<td>0.067</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.238</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Worried</strong></td>
<td>Partial Eta-Sq</td>
<td>0.007</td>
<td>0.077</td>
<td>0.129</td>
<td>0.066</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.115</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Concern</strong></td>
<td>Partial Eta-Sq</td>
<td>0.001</td>
<td>0.08</td>
<td>0.124</td>
<td>0.068</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.650</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

**WEB APPENDIX STUDY B**

In this study, we allowed consumers to self-generate purchases, without any guideless or restrictions. We also examined whether consumers view material purchases as having a longer utility duration than experiential purchases.
Method and Procedure

We recruited 300 MTurk workers and 301 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”).

Participants were asked to imagine receiving $1,000 and indicated how they would spend the money. The only stipulation was that they had to spend the money—they could not save it or use it to pay off debt. Next, they completed a delay discounting task as in Web Appendix Study A, which asked the least amount of money they were willing to accept to delay the delivery of the purchase by 3 days and 10 days (within-subject). Participants also rated the purchase as more material or more experiential (1=Definitely More Material, 6=Definitely More Experiential). We also asked participants 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 and were removed from the analysis, leaving us with a total of 280 participants. Finally, we collected gender, age, and any comments.

Results and Discussion

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.

A 2(product type: material vs. experience) x 2(time horizon: 3 days vs. 10 days) mixed ANOVA 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 for purchases rated more experiential versus material \((b = 2.86, SE = .74, t(277) = 3.77, p < .001, \text{see Web Appendix Figure 2})\).

WEB APPENDIX FIGURE 2

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

Also consistent with our conceptual framework, participants indicated that material purchases would take more time to consumer than experiential purchases \((b = 6.74, SE = .94, t(279) = 7.18, p < .001)\).

WEB APPENDIX STUDY C
One could suggest that while experiences are often hedonic in nature, material purchases tend to be more utilitarian. If so, this distinction could explain the effects we observed in discounting. While there is intuitive appeal for this idea, research in the domain of hedonic consumption has not found a relationship between hedonic consumption and impatience/discounting (for a review, see Alba and Williams 2013). Nonetheless, we orthogonally manipulate the material-experiential nature of the consumption with hedonic versus utilitarian goals.

**Method and Procedure**

The study was a 2(Purchase Type: Material vs. Experiential) x 2(Purchase Goal: Hedonic vs. Utilitarian) between subjects design. We recruited 350 Amazon’s Mechanical Turk workers and 355 completed the study (53.8% male, one “other/prefer not to answer,” and one participant did not answer). In the utilitarian condition participants were asked to imagine that they have recently been experiencing neck and back pain and decided to purchase a back/neck massager (a massage therapy session) to help them heal. Further, they were told that this particular back/neck massager (massage therapy session) was especially geared towards therapeutic needs and is mainly targeted those who experience back pain. Alternatively, the participants assigned to the hedonic condition were asked to imagine that they have recently gone through a busy and stressful period and decided to purchase a back/neck massager (a massage therapy session) to treat themselves. They were further told that this particular massager (massage therapy session) is especially geared towards relaxation and is mainly targeted those who want to kick back and enjoy themselves. All participants were told that their massager is scheduled to arrive (massage is scheduled) for later this week, but that they are offered money if they are willing to delay the
arrival of their massager (the date for their massage therapy). All participants were explicitly told that delaying the delivery of the massager (rescheduling the massage therapy) would not be a problem with their work and/or school.

Next, all participants made a series of choices between receiving their massager (massage therapy) later this week and delaying in by 10 days and receiving various amounts of compensation (Bartels and Urminsky 2010). Following the main dependent variable, participants responded to manipulation checks taken from previous literature (Voss, Spangenberg, and Grohmann 2003), measuring whether the purchase in question was perceived to be hedonic (fun-not fun; dull-exciting; delightful-not delightful; thrilling-not thrilling; enjoyable-unenjoyable; α = .80) and utilitarian (helpful-unhelpful; functional-not functional; necessaryunnecessary; practical-impractical; α = .88). We then asked the same five questions from the previous studies measuring concern with scheduling, concreteness, and memory. Finally, participants indicated their gender and whether they understood the questions (yes/no). Eight participants indicated no and one did not answer, suggesting that 98% of the participants were paying attention and understood the questions. Results are reported both with and without these participants.

Results and Discussion

Manipulation Check. As expected, we found that the massager/massage therapy session for relaxation purposes (M = 5.27) was more hedonic than making the purchase for therapeutic purposes (M = 4.88; t(353) = 3.41, p < .001). Similarly, we also found that purchasing the massager/massage therapy session for therapeutic purposes was directionally more utilitarian (M = 5.37) than for relaxation purposes (M = 5.19; t(353) = 1.40, p = .16), though not significantly
different. These analyses suggest that the manipulation was successful in creating a significant difference in how hedonic participants perceived the purchases.

Impatience. As with our previous studies, our main variable of interest is the number of impatient choices (receive the massage/massage therapy this week or delay until the following week). In line with our predictions, we found a main effect of purchase type. Participants made significantly more impatience choices toward experiential purchases (M = 4.34), compared to material ones (M = 3.50, F(1,351) = 9.11, p < .01, ηp² = .025). We also found main effect of goal type (hedonic/utilitarian) on discounting (F(1,351) = 8.74, p < .01, ηp² = .024). However, the pattern of results was in the opposite direction of what would be predicted by the alternative account. That is, participants made significantly more impatience choices under a utilitarian goal (Mutilitarian = 4.33) than a hedonic goal (Mhedonic = 3.51). More importantly the type of goal did not moderate the material-experiential effect (F(1,351) < 1, p > .6, ηp² = .001). We find the same results if we exclude the eight participants that indicated that they did not understand the questions: main effects for purchase type (F(1,343) = 10.07, p < .01, ηp² = .029) and goal (F(1,343) = 7.99, p < .01, ηp² = .023), with no significant interaction (F(1,343) < 1, ηp² = .002). These results suggest that the material-experiential asymmetry holds for both material and experiential purchases.

Additional measures. We examined participants’ concern with scheduling and their perceptions of concreteness and memory with the purchase. We did not find a heightened concern for scheduling in the experience condition (and it was directionally opposite, Mmaterial = 2.83; Mexperience = 2.57; F(1,347) =2.52, p = .11; ηp² = .007). There were no difference in beliefs about memory across material and experiential conditions (Mexperience = 3.98; Mmaterial = 3.76; F(1,351) = 2.12, p = .15; ηp² = .006). We found a marginal difference in concreteness.
Participants rated the experience as marginally more concrete ($M_{\text{experience}} = 5.31$) than the material purchase ($M_{\text{material}} = 5.00$; $F(1,351) = 3.69$, $p = .056$; $\eta_p^2 = .010$). However, we found no evidence that concreteness mediates our results: the effect of material-experiential on impatient choices remains significant when concreteness is added to our analysis ($F(1,351) = 7.72$, $p < .01$; $\eta_p^2 = .021$).

WEB APPENDIX STUDY D

This study aimed to test the robustness of our effect to private versus public consumption of the experiences. People often consume experiences with others, but most material purchases are consumed alone. Further, there is evidence that this difference in the social nature of experiences plays a role in experiential purchases leading to more happiness (Caprariello and Reis 2012). As such, the heightened social nature of the experiential purchases might lead to greater impatience. To rule out this possibility, we introduced a solitary experience condition and compared it to a social experience condition and a material product condition.

Method and Procedure

The study was a 3-cell (Purchase Type: Material vs. Social Experience vs. Solitary Experience) between-subjects design. Three hundred six Amazon Mechanical Turk (MTurk) workers participated in the study (mean age = 34.1, 52.7% male, five no responses, and one “other/prefer not to answer”).

We provided either a material ($\$950$ couch) or experiential ($\$950$ vacation) purchase to all participants (adopted from Kumar and Gilovich 2015, 2016). To provide a more conservative
test, we modified the electronic gadgets (which are time sensitive) to a couch. In the material condition, we told participants, “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 the social experience condition, we gave participants the following scenario: “Imagine that you've recently purchased a new 5-day 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.”

We altered the social experience condition to create a solitary experience version with the following wording: “Imagine that you've recently purchased a new 5-day vacation to go on by yourself. 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 the tour agency is also offering to pay you money to delay the vacation for a month. Delaying the vacation won't be a problem with work and/or school for you. In other words, scheduling is not an issue if you decide to go next week or delay for a month.” Then, in all three conditions, participants made a series of 10 choices. Each choice gave them an option to take the vacation next week or to delay it for a month and receive compensation instead. The compensation started from $0 and increased to $450 in $50 increments. To rule out other potential alternative explanations, such as scheduling concerns, concreteness, or positive affect
differences, we also asked nine questions (on 7-point scales). The questions loaded onto four factors: concern with scheduling [rescheduling their vacation (delivery of their couch) and how time sensitive the vacation (delivery of the couch) was], concreteness [how concretely they imagine this vacation (couch)], memory [how long and how well they will remember this vacation (couch)] and positive emotions towards the purchase [fun, exciting, delightful, thrilling, unenjoyable (reverse coded)].

**Results and Discussion**

Our main variable of interest was the number of impatient choices. The analyses revealed a significant effect of product type on impatience (\(F(2,303) = 6.71, p < .01, \eta^2_p = .042\)). In particular, consistent with our previous studies, we found that consumers made less impatient choices when delaying a material item (M = 2.68) compared to delaying a social experience (M = 3.69; \(t(303) = 3.44, p < .001\)) or a solitary experience (M = 3.53; \(t(303) = 2.80, p < .01\)). As importantly, the solitary and social experience conditions did not differ in the extent of impatience they were associated with (\(t(303) < 1, ns\)).

Next, we analyzed the measures collected to rule out alternative explanations. We found that participants in the solitary (M = 2.44) and social (M = 2.59) experience conditions were no more concerned about rescheduling than those in the material condition (M = 2.28; \(F(2,293) = 1.01, p > .30\)). Further, we found no differences in how concretely they imagined their purchase (\(M_{\text{solitary experience}} = 5.55; \ M_{\text{social experience}} = 5.47; \ M_{\text{material}} = 5.22; \ F(2,291) = 1.69, p > .18\)). We did find some differences in terms of memory (\(M_{\text{solitary experience}} = 5.62; \ M_{\text{social experience}} = 5.61; \ M_{\text{material}} = 4.17; \ F(2,291) = 37.45, p < .001\)) and positive affect (\(M_{\text{solitary experience}} = 5.76; \ M_{\text{social experience}} = 5.93; \ M_{\text{material}} = 4.64; \ F(2,278) = 44.14, p < .001\)). However, increased memory and positive
affect in the experience (vs. material) conditions did not predict impatience \((F(2,290) < 1; F(2,277) = 1.99, p = .16, \text{ respectively})\). And while a concern for scheduling did lead to impatient choices \((F(2,292) = 17.59, p < .001)\), it did not mediate the effect of purchase type on impatience (nor did any of the other measures, see Table 2 for detailed statistics on each measure).

### TABLE 2

Analysis of Potential Mediators

<table>
<thead>
<tr>
<th>Potential Mediator</th>
<th>Statistic</th>
<th>Covariate (Potential Mediator)</th>
<th>Purchase Type</th>
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<tr>
<td><strong>Scheduling Concern</strong></td>
<td>Partial Eta-Sq</td>
<td>0.054</td>
<td>0.04</td>
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<td></td>
<td>(p)-value</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Indirect Effect</td>
<td>[-.104,.049]</td>
<td></td>
</tr>
<tr>
<td><strong>Expectations of Memory</strong></td>
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<td>0.052</td>
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<tr>
<td></td>
<td>Indirect Effect</td>
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<td><strong>Positive Affect</strong></td>
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<tr>
<td></td>
<td>Indirect Effect</td>
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<tr>
<td><strong>Concreteness</strong></td>
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<td>0.049</td>
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<td>(p)-value</td>
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</tr>
<tr>
<td></td>
<td>Indirect Effect</td>
<td>[-.012,.034]</td>
<td></td>
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</tbody>
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