Sentimental Value and Its Influence on Hedonic Adaptation

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Sentimental value is a highly prevalent, yet largely understudied phenomenon. We introduce the construct of sentimental value and investigate how and why sentimental value influences hedonic adaptation. Across 7 studies, we examine the antecedents of sentimental value and demonstrate its effect on hedonic adaptation using both naturally occurring and experimentally manipulated items with sentimental value. We further test the underlying process linking sentimental value and hedonic adaptation by showing that whereas feature-related utility decreases for all items with time, sentimental value typically does not, and that sentimental value moderates the influence of the decrement in feature-related utility on hedonic adaptation. Moreover, this moderating effect of sentimental value is driven by a shift in focus from features of the item to the associations that item possess. We conclude with a discussion of related phenomena and implications for individuals.

Keywords: sentimental value, hedonic adaptation, feature-related utility, associations, attention

Theoretical Background

Sentimental Value

Defining sentimental value. To understand what sentimental value is and is not, it is helpful to first consider the utility people derive from items. As illustrated in Figure 1, we propose that the utility that people derive from owning an item is a function of at least two components: feature-related utility derived from item features (e.g., the appearance, functions, and specifications) and sentimental value derived from positive associations with a significant other or with a special event or time in one’s life. For example, consider these two situations: (a) a bicycle purchased for the self and (b) a bicycle received as a gift from a loving spouse. In this case, feature-related utility refers to the utility that stems from the materials, appearance, functions, and specifications, while sentimental value refers to the value that stems from the fact that the bicycle reminds the owner of his or her spouse and the moments they were together. We propose that, first, while feature-related utility tends to decrease with time, sentimental value tends not to. Second, objects that are particularly sentimentally valuable are less likely to exhibit hedonic adaptation. In the case of the bicycle, regardless of its source (purchase or gift), the owner will derive less and less utility from its features as time passes. However, when the bicycle was received as a gift, the associations that it evokes will linger over time. These associations will act as a buffer against the decrease in feature related utility and ultimately result in longer lasting happiness with the bicycle, a reduction in the rate of hedonic adaptation.
utility, which is defined by the value derived from all other factors that are beyond item features. For example, in addition to item features, people may gain value if an item reflects who they are (i.e., value from identity signaling), is of a favorable brand (i.e., brand value) or is a particularly good deal (i.e., transaction utility).

Though these are all important components of nonfeature-related utility, the central focus of this research is sentimental value. Although sentimental value is a highly prevalent phenomenon in individuals’ daily lives (Belk, 1988, 1991; Csikszentmihalyi & Rochberg-Halton, 1981; List & Shogren, 1998; Solnick & Hemenway, 1996; Wallendorf & Arnould, 1988), it has yet to be clearly defined and systematically studied. The best scholarly definitions of sentimental value come from philosophy (Fletcher, 2009a, 2009b; Hatzimoysis, 2003). Though these definitions vary, we build upon Fletcher (2009b) and define sentimental value as the nonfeature-related value derived from the associations with significant others or from the associations with special events or time in one’s life. For instance, an item can have sentimental value because it belonged to or was used by a family member, because it was received as a gift from a friend or a person one loves, or because it is a token that represents a particular life event (e.g., a souvenir from a vacation or a diploma earned upon graduating from college). In all these cases, sentimental value lies with the associations that the objects evoke (e.g., with a family member, a loved one, a friend, or a special event or time).

More formally, we define sentimental value to stem from two places: (a) associations with “significant others,” defined as “any individuals who are or have been deeply influential in a person’s life and in whom one is or once was emotionally invested” (Andersen & Chen, 2002, p. 619) such as family members, romantic partners, and close friends; and (b) associations with “special events or time in one’s life,” defined as events or time that are “distinguished by some unusual quality, especially being in some way superior” (Merriam-Webster, Inc., 2004) such as weddings, graduations, birth of a child, and personal achievements. For example, a necklace purchased by a loving spouse while on vacation can provide the recipient with sentimental value either from the fact that the necklace brings to mind the loving spouse or because it brings to mind the wonderful times the couple shared on the vacation. It need not be that both forms of associations appear simultaneously, nor must it be that they appear independently. It is worth noting that for the purposes of this research, we make no specific predictions about the relationship between the different antecedents of sentimental value and the consequences that follow, but rather present both to better define the construct.

We next provide three clarifications for the definition. First, sentimental value is the value derived from specific types of associations, namely, associations with a significant other or with a special event or time in one’s life. Therefore, the value derived from other associations (e.g., identity signaling) should not be confused with sentimental value. Second, objects acquired from the same source may differ in their strength of the associations (Hutchison, 2003) with a significant other and with a special event or time, and it is this strength of the associations that predicts the degree of sentimental value. For example, a magnet purchased at Disney World may have high sentimental value but a bottle of water purchased at the same location and same time (and, therefore, presumably carrying the same associations) may not. The reason is that the strength of the associations differs, such that, as compared with the bottle of water, the magnet carries much stronger associations with the amazing life experience. In our research, we do not attempt to examine the many factors that influence the strength of such associations, though we find this open question quite interesting and worthy of future exploration. Third, for the purpose of this research, we only consider sentimental value that is positive, leaving the question of whether sentimental value can even be negative to future research.

Evidence of sentimental value. Prior research examining sentimental value falls into two major categories: work looking to identify the existence and magnitude of sentimental value and work looking at the overall relationship between people’s possessions and themselves. In the anthropological work by Csikszentmihalyi and Rochberg-Halton (1981), the researchers interviewed 315 Chicago residents about the objects in their homes that they consider “special” in any way. They then went on to categorize the 6,585 different objects that these individuals identified as to why they were special. Relevant to the present research, they identified that, of all objects that people had any value for (including merely having strong monetary value), 15.6% fell into categories that we would consider to be sentimental in nature (e.g., “memento,” “heirloom,” “souvenir,” etc.; Csikszentmihalyi and Rochberg-Halton (1981); Appendix D). That is, approximately one in six items that people cherish, they do so because of sentimental value. In economics, the sentimental value of gifts to gift recipients has been quantified such that, on average, the total value that gift recipients derive from their gifts is comprised roughly half of material value and half of sentimental value (List & Shogren, 1998; Solnick & Hemenway, 1996). In summary, as to the questions of whether sentimental value exists and whether it is relevant, there appears to be ample evidence suggesting that it does and it is.

Of course, this work speaks little to the rich relationship that individuals have with such items, especially when those items are sentimentally valuable. For this, we turn more to the consumer culture theory literature that, for a long time, has been interested in...
the rich relationship that individuals have with their possessions. Though this literature seldom uses the term “sentimental value,” it is clear that sentimental value is an important component to the relationship that individuals have with their possessions (Arnould & Thompson, 2005; Belk, 1991; Bradford, 2009; Curasi, Price, & Arnould, 2004; Price, Arnould, & Curasi, 2000; Wallendorf & Arnould, 1988). For instance, Belk discussed five cases of special possessions (Belk, 1991). Most related to sentimental value, Belk refers to “memory-laden objects” including family photographs, heirlooms, wedding rings, gifts, and souvenirs of enjoyable travel. These special possessions are valued because they are able to evoke particular memories of times, places, and people. Indeed, Belk describes them as being “. . . mnemonic device[s] that evoke affective experiential knowledge . . .” (Belk, 1991, p. 29) when interacted with. That is, when a person interacts with a memory-laden object, she is reminded of the affective experience that she had either with the significant other who gave her the object, or the event or time that the object commemorates.

Taken together, previous research related to sentimental value suggests that sentimental value is prevalent and plays a critical role in individuals’ life experiences. However, sentimental value has yet to be formally and empirically defined, its antecedents have yet to be systematically tested, and the causal relationship between sentimental value and other important variables has yet to be explored. The current research aims to begin to fill these gaps by formally defining sentimental value, beginning to systematically investigating the antecedents of sentimental value, and studying the role sentimental value plays in influencing the happiness one derives from an object over time.

**Hedonic Adaptation**

A central goal that individuals pursue is to maximize their happiness (Russell, 1930). Although any improvement in acquisition and consumption may increase happiness, the increased happiness may not persist. One reason for this is hedonic adaptation, defined as a decrease in hedonic response to a stimulus over time (Frederick & Loewenstein, 1999; Nelson, 1964). For example, a person may feel very happy right after acquiring a new item, but may not feel nearly as happy with it as time goes by. This adaptation is determined by multiple factors, including basic psychophysical habitation, diversion of attention, and rationalization (Frederick & Loewenstein, 1999; Nelson; Wilson et al., 2005; Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000). Moreover, hedonic adaptation is rather robust and prevalent. People adapt to change in income (Di Tella, Haisken-De New, & MacCulloch, 2010), experiences (Epstein, Temple, Roemmich, & Bouton, 2009; Nelson & Meyvis, 2008; Nelson et al., 2009; Redden, 2008), academic careers (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998), and even to extreme life-changing events like incarceration (Zamble, 1992).

An important question posed to researchers is how can we slow unwanted hedonic adaptation? Recent research has greatly advanced our understanding of hedonic adaptation by examining how item features influence hedonic adaptation (Carter & Gilovich, 2010, 2012; Galak et al., 2013; Kurtz et al., 2007; Nelson & Meyvis, 2008; Nicolao et al., 2009; Redden, 2008; Temple et al., 2008; Van Boven & Gilovich, 2003; Wilson et al., 2005). All of this work, however, makes the assumption that the sole inputs to hedonic adaptation are item features without considering the role that nonfeature-related factors play. In the current research, we explore the influence of one type of nonfeature-related utility on hedonic adaptation by examining the relationship between sentimental value and adaptation. For simplicity, we consider only two components from which individuals derive happiness: feature-related utility and sentimental value. We do so not to suggest that other components may be less relevant, but instead try to keep our conceptualization clear and precise. Indeed, we take care in our experiments to manipulate sentimental value without also manipulating other forms nonfeature related utility.

**Sentimental Value’s Influence on Hedonic Adaptation**

As previously stated, we predict that sentimental value slows hedonic adaptation. This prediction stems from three main propositions. The first is that sentimental value, in general, does not decline with time. We predict this for two reasons. First, the attitudes literature documents that important attitudes exhibit greater stability over time (Barden & Tormala, 2014; Krosnick, 1988; Krosnick & Petty, 1995). For example, in one study, participants were asked to report their attitudes on four issues during a national election and how important each attitude was to them. Attitude importance was negatively related to attitude change (Krosnick, 1988). Given that the attitudes toward associations with significant others and special events or time are more personally important than those toward other associations (Andersen & Chen, 2002; Berscheid, Snyder, & Omoto, 1989), existing attitude research suggests that sentimental value, which highly depends on the attitudes toward the underlying associations with significant others and special events or time, tend to be stable. Second, research in human memory has found that people tend to remember meaningful personal events more positively than they actually were at the time that they occurred (Bartlett, 1995; Greenwald, 1980; Mitchell, Thompson, Peterson, & Cronk, 1997; Sutton, 1992). In one study, for example, participants’ recollection of a bicycle trip was more favorable than reported enjoyment during the trip. Even though more than half of participants experienced disappointment during the vacation, in retrospect, only 11% of participants remembered feeling disappointed. This line of research suggests that sentimental value of an object may, if anything, actually increase if memories and associations become more positive over time.

The second proposition is that objects with sentimental value shift focus away from the features of an object and toward the associations that that object possesses. In other words, when people are exposed to an object they can either think about its features or its associations. When an object has little sentimental value, people primarily focus on the features of the item. However, when the item is sentimentally valuable, they instead focus on the associations that that item evokes. It is this shift in focus that underlies how sentimental value slows hedonic adaptation. This proposition is inspired by two bodies of literature. First, research on self-complexity proposes that high self-complexity individuals who possess more unique self-aspects are less susceptible to affect swings than low self-complexity individuals (Linville, 1985, 1987). Extending this notion from people to objects, we propose that objects that have high sentimental value are more complex than objects with low sentimental value, as the former not only
have product features but also carry associations with a significant other or associations with a special event or time. The critical question here is how these two different aspects jointly inform happiness. Self-complexity theory is mute on this question, so we turn to consumer culture theory to help fill this gap.

Consumer culture theory suggests that people cherish objects with high sentimental value regardless of whether they have low or high feature-related utility (Curasi et al., 2004; Sherman & Newman, 1977–1978; Wallendorf & Arnould, 1988). For example, when American respondents were asked to explain why they chose a particular object as their favorite, they did not focus on feature-related attributes, but rather on the personal memories these objects brought to mind (Wallendorf & Arnould, 1988). In addition, there was no evidence that objects with higher feature-related utility were more likely to be chosen as the favorite (Belk, 1991; Wallendorf & Arnould, 1988). This suggests that, though important for objects with low sentimental value, feature-related utility is much less critical in determining happiness with an object that has high sentimental value (Belk, 1991). We suspect that sentimental value’s capability of overriding the influence of feature-related utility on happiness may be because of a shift in focus away from the features of the object, and toward the associations that the object possess. Accordingly, the item features play a much lesser role in influencing happiness with objects that have high sentimental value.

The final proposition is that when objects are highly sentimentally valuable, they reduce the influence that the decline in feature-related utility has on happiness with the object. Whereas the aforementioned shift in focus toward associations explains how sentimental value operates in general, this prediction explains precisely how sentimental value slows hedonic adaptation itself. For all items, as has been shown many times before, utility from features declines with time (Carter & Gilovich, 2010, 2012; Galak et al., 2013; Nelson & Meyvis, 2008; Nicolao et al., 2009; Redden, 2008; Wang et al., 2009). However, we predict that when an object has sentimental value, this decline in feature-related utility becomes less influential in determining hedonic adaptation itself. In other words, even though feature-related utility declines for all objects, when an object is highly sentimentally valuable, people’s happiness with the object is less affected by such a decline.

Taken together, these three propositions explain how happiness with an object changes over time in response to sentimental value. For objects that are low in sentimental value, individuals’ happiness heavily depends on feature-related utility. Because feature-related utility decreases with time, happiness also decreases with time. For objects that are high in sentimental value, individuals’ happiness heavily depends on sentimental value, which is derived from a shift in focus to the associations that that item possesses, and less so on feature-related utility. Because, in most cases, sentimental value does not decrease with time, happiness is less likely to decrease for such objects. Therefore, we predict that people adapt more slowly to objects that are highly sentimentally valuable than those that have are less sentimentally valuable.

Below, we report seven studies that first help establish a definition of sentimental value (Studies 1A and 1B), then test our main prediction that sentimental value slows hedonic adaptation (Studies 2–6), and finally confirm all three primary propositions outlined above (Studies 3–6). We conclude with a discussion of our results and implications for future research.

Studies 1A and 1B

Building on previous work on sentimental value in philosophy, anthropology, and consumer culture theory, we define sentimental value as the value derived from associations with significant others or from associations with special events or time in one’s life. The primary purpose of Studies 1A and 1B is to empirically validate this definition.

Study 1A

Participants. One hundred Americans (29 females; \( M_{\text{age}} = 29.96, SD = 10.04 \)) from the Amazon Mechanical Turk (mTurk) online panel completed a survey in exchange for $0.30.

Procedure. Participants were asked to think of one nonconsumable item they currently own that has lots of sentimental value to them and provide a brief description of that item. Next, they were asked to explain why this item had sentimental value to them in as much detail as possible (open-ended).

A research assistant read over all 100 responses and identified four themes that emerged: items that commemorate a special event or time, items that act as reminders of other people, items that were gifts, and items that were inherited. Next, two Amazon mTurk “categorization master coders” blind to our hypotheses independently reviewed the description of each item and coded the reasons participants provided based on these four categories (more than one category could apply to a single item as in the case of a token from a vacation that both reminders the owner of the vacation and of the loved one they went on vacation with). Specifically, for each item, they indicated if the description included any reference to any of the four aforementioned categories.\(^1\)

Results. We found high interrater agreement for all four categories: Cohen’s \( \kappa \) ranged from .71 to .92, \( ps < .001 \). For the items that the coders disagreed on, we used a conservative approach and assumed that the reason provided did not include the category in question. As shown in Table 1, 51.0% of the items commemorated a special event or time and 58.0% of the items reminded participants of a significant other. Overall, 80.0% of items were either associations with a special event or time or associations with a significant other. That is, 80.0% of the items participants listed were sentimentally valuable for reasons consistent with our proposed definition. In addition, 41.0% of the items were gifts, and 5.0% were inherited. Overall, 46.0% of items were either received as gifts or inherited.

Study 1B

Study 1B sought to validate the results of Study 1A by assessing if important but not sentimentally valuable objects also elicit the associations described above. If this were to be the case, then sentimentally valuable objects are no different than, say, monetarily valuable objects. To test this distinction, we borrowed a methodology used by Kamptner (1989) in assessing the value of

\(^1\) In accordance with the suggestions made by Simmons, Nelson, and Simonsohn (2011), we report all measures collected and all levels of independent variables across all of our experiments. We also do not exclude any participants without reporting our reasoning. Finally, we use covariates consistently across all of our experiments and excluding covariates does not change our conclusions.
personal possessions and asked participants to indicate three important objects to them. We then assessed the degree to which the associations listed above appear more prominently with sentimentally valuable objects as compared with nonsentimentally valuable objects. We predict that associations with a significant other and/or associations with special events or time in one’s life should appear more prominently for objects that are sentimentally valuable, but not objects that are merely important to individuals for non-sentimental reasons (e.g., they are expensive).

Participants. One hundred and one Americans (42 females; \(M_{age} = 35.63, SD = 13.44\) ) from the Amazon mTurk online panel completed a survey in exchange for $0.50.

Procedure. To elicit objects that were equally important but differed in the type of value they possess (sentimental or otherwise), participants imagined a hypothetical scenario where their home was burning down and they could save any three objects. Specifically, participants read:

In this study we’d like you to imagine that your home was about to be destroyed by fire. Thankfully all people and pets living in the home are completely safe. However, the possessions in your home are likely to be lost to the fire. We’d like you to imagine that you could save three, and only three, objects that are in your home. For the purpose of this question, the size of the object doesn’t matter. For instance, if you’d like to save your refrigerator, assume that you could get it out without a problem. The size and weight aren’t relevant. Below, please take a moment to list the three objects.

Each participant then listed three objects. In this way, participants listed three highly important objects, but not necessary objects that are important for any prespecified reason (e.g., sentimental value). For each object, they then answered two questions: “This object has sentimental value to me” and “This object has functional value” on 7-point scales (1 = strongly disagree, 7 = strongly agree). In addition, participants reported whether the item commemorated a special event or time in their life, whether the item reminded them of a significant other, such as family members, romantic partners, and friends (yes, no, or unsure), and how they acquired the item (purchase, gift, inheritance, unsure, or other).

Results. Table 1 summarizes the information about objects (n = 108) that were considered highly sentimentally valuable (i.e., items that scored 7 on “The object has sentimental value to me”). Consistent with the result of Study 1A, 68.5% of the items commemorated a special event or time, 75.9% of them reminded participants of a significant other. Overall, 84.3% of items were either associated with a special event or time or with a significant other. That is, 84.3% of the items participants listed were sentimentally valuable for reasons consistent with our proposed definition. In addition, 25.9% of them were gifts, and 17.6% of them were inheritance. In total, 43.5% of items were either received as gifts or inherited.

More important, we argue that such associations are unique properties of objects that have sentimental value, rather than properties of objects that are merely considered important. Supporting this argument, we found that the more an object was reported to be sentimentally valuable, the higher the probability the object was also associated with either a special event or time, \(r = .56, p < .001\), or with a significant other, \(r = .54, p < .001\). Specifically, as shown in Figure 2, although all objects, by the nature of the task, were important to participants, the more an object was sentimentally valuable, the more it was likely to hold associations with special events or significant others. In addition, correlational results revealed that objects with higher sentimental value were more likely to be gifts, \(r = .15, p < .01\) or inheritances, \(r = .22, p < .001\), and less likely to be purchases made for the self, \(r = -.32, p < .001\). An interesting finding was that objects with higher functional value were less likely to be associated with either a special event or time, \(r = -.45, p < .001\), or with a significant other, \(r = -.44, p < .001\), less likely to be inheritances, \(r = -.24, p < .001\), and more likely to be purchases made for the self, \(r = .32, p < .001\).

Discussion

Results of Studies 1A and 1B suggest that our definition of sentimental value largely fits individuals’ lay understanding about sentimental value. The thought protocol analysis of Study 1A revealed that at least 80% of sentimentally valuable items were valued as a result of their associations with a significant other or/and associations with a special event or time in one’s life. Study 1B replicated this finding and showed that these associations were properties that only belong to objects that were sentimentally valuable, as opposed to objects that were important for other reasons.

Study 2

Having empirically validated the definition of sentimental value, Study 2 aims to demonstrate that sentimental value reduces the rate of hedonic adaptation by comparing happiness over time with gifts versus purchases. Specifically, participants listed either all gifts they received or all purchases they made during a Christmas holiday season and indicated happiness with each item across two time periods, shortly after acquisition and 45 days later. We hypothesize that items received as gifts will have greater sentimental value than items purchased for the self, and that this sentimental value will lead to a reduction in the rate of hedonic adaptation.
Method

This study consisted of two parts that were spaced 45 days apart. Participants were recruited from the Amazon mTurk online panel and paid $0.50 for completion of each part.

**Part 1.** Two hundred and 73 Americans (97 females; M<sub>age</sub> = 29.81, SD = 9.99) completed the first part of the study on January 3, 2013. Participants were randomly assigned to recall either all nonfood or noncash (e.g., gift cards) gifts they received (gift condition), or all nonfood or noncash items they purchased for themselves (purchase condition), during the Christmas holiday period of 2012 (that occurred the previous week). All participants were asked to type each item into a textbox, one at a time, until they could not think of any more items. To measure the initial happiness with the items, participants indicated how happy they were at that very moment with each item they listed, one at a time (1 = very unhappy, 11 = very happy). Finally, participants indicated the cost of each item, to be used as control measures.

**Part 2.** Participants listed 996 items in total during the first part of the study. Two research assistants blind to the hypothesis and the condition from which the items came, reviewed all the items and deleted 41 monetary gifts (i.e., cash and gift cards), 18 food items, and 2 tickets, because we explicitly instructed participants not to list those items as they would likely not possess them for a long period of time. Forty-five days after the first part of the study, participants received a customized email listing the items they reported during the first part of the study (excluding those items that were deleted) and asking them to participate in a follow-up study. One hundred and 18 participants (43 females; M<sub>age</sub> = 32.88, SD = 12.10) completed the second part of the study and answered questions about the 431 items they listed during the first part. Participants who elected to complete Part 2 were no happier with the items during Part 1 as compared with those who did not complete Part 2 (M<sub>complete</sub> = 9.28 vs. M<sub>incomplete</sub> = 9.06, t(268) = .44, p = .67), suggesting that attrition bias was not an issue.

Once participants agreed to participate in the second part of the study, they indicated (one at a time) whether they still possessed each item, how happy they were with the item at that moment on the same scale used in Part 1, how much sentimental value each item had to them at that moment (1 = none at all, 7 = very much), and the lowest amount of money they would accept to sell each item (willingness to accept, WTA).

**Item categorization.** It is quite possible that the items listed across our two conditions (gift vs. purchase) differed. That is, it is possible that gifts received were fundamentally different in nature from items purchased. For instance, individuals may receive more clothing and clothing accessories as gifts than they purchase for themselves, and may purchase more electronics for themselves than they receive as gifts. If this is the case, then any conclusions drawn from this study (and Study 4) may be a function of item type and not sentimental value per se. Therefore, we sought to categorize the items listed in our studies to determine if the nature of gifts received was fundamentally different from the nature of the purchases made.

In this study, we observed 407 objects either purchased or received as gifts. To determine if the type of objects varied depending on whether they were purchased or received as a gift, we categorized each item into one of eight categories. We accomplished this task by using the Amazon mTurk categorization system. This system is a special case of the general Amazon mTurk system and is optimized for performing categorization tasks with human coders. Coders were shown the description of one item at a time and asked to categorize it into one of 19 item categories (some categories were nested within others; e.g., “Car” was nested within “Car or car accessories”; see the first two columns of Appendix A). Categories were chosen by one of the authors after reading a sample of the items. They were chosen to be both general enough to include virtually all items listed and specific enough to allow for subsequent inferences. Coders were paid $0.03 per item categorized. Each item was categorized by two independent coders and any disagreements were resolved by a third, non-mTurk coder. Twenty-eight mTurk coders completed the task. Because a coder was free to categorize as few or as many items as they liked, the number of completed categorization tasks varied across individu-
als, with the average number of items per coder being 29 (max = 120, min = 1). Following the categorization task, the items were spot checked for accuracy and categories with few items (e.g., musical instruments) were rolled up into more general categories (e.g., sporting equipment, musical instruments, and games [not video games]). Eight (2.0%) of the items did not easily fall into any of the remaining categories (e.g., “1 ounce gold bar”) and were labeled as “other.” We found agreement for 77.9% of the items and resolved the remaining disagreements as described above.

Results

Items. Appendix B shows the items that participants still possessed at the time of Part 2. There was a significant difference between conditions ($\chi^2(7) = 14.88, p = .04$) in the type of items received or purchased. For instance, participants purchased many more Electronics and electronic accessories than they received as gifts, and received many more Clothing and clothing accessories as gifts than they purchased. On the surface, this difference poses a problem in interpreting our subsequent analyses because the nature of items differs across conditions. To address this problem, in this study and Study 6 we statistically control for the variation in item types by including category level dummy variables in all of our analyses. As will be evident, even when controlling for these differences statistically, our results demonstrate that sentimental value plays a critical role in determining rates of hedonic adaptation.

Besides item type, it is possible that the items also differed on other related dimensions, such as cost. Because the cost of the items was positively skewed, we performed a log transformation and used the natural log of the cost as a covariate in our analyses. Additionally, because each participant listed multiple items resulting in the possibility of nonindependent residuals, we cannot use standard OLS regression to analyze these results. Instead we use regression with robust $SE$s using participants as the cluster variable to account for this nonindependence. Doing so takes into account the fact that the ratings made by one participant for multiple items are likely to be at least somewhat correlated. Thus, we examined the differences between conditions by conducting linear regressions of different variables on source (0 = purchase, 1 = gift) with clustered robust $SE$s. A linear regression of the natural log of cost on source (0 = purchase, 1 = gift) revealed no difference in cost between conditions (untransformed cost: $\text{Median}_{\text{gift}} = $25.00 vs. $\text{Median}_{\text{purchase}} = $25.00; $B = -.06, SE = .16, t(114) = -0.40, p = .69$). Although no difference in the natural log of cost was found in this study, it might be significantly different across conditions in other studies and so, to be consistent in our analytical strategy, we still include it as a covariate in our analyses of this study.

Possession. Participants in the gift condition were more likely to still possess the items 45 days after Part 1 than those in the purchase condition (97.0% vs. 90.3%; $B = 1.47, SE = .55, \text{Wald} = 7.05, p = .008$) when controlling for the category level dummy variables and the natural log of cost, suggesting that participants were less likely to dispose of gifts than purchases. Though this effect is entirely consistent with our predictions, we do not wish to overstate these results as possession levels were generally very high across both conditions.

Sentimental value, happiness, and WTA. We first confirm that gifts were, in fact, more sentimentally valuable than their purchased counterparts. A linear regression of sentimental value on source (0 = purchase, 1 = gift), category level dummy variables and the natural log of cost, with clustered robust $SE$s, revealed a significant effect of source ($B = .66, SE = .26, t(114) = 2.58, p = .01$) such that gifts were more sentimentally valuable than purchases.

Appendix C shows the percentage of change in happiness of all our studies where happiness was measured. To determine the rate of hedonic adaptation, we subtracted Part 1 happiness ratings from Part 2 happiness ratings. This resulted in a measure of change in happiness across time and served as our measure of hedonic adaptation. Negative values represent decreases in happiness while positive values represent increases in happiness. Note that in some studies, the initial happiness was significantly different across conditions, and thus, it is possible that the difference in hedonic adaptation may be caused by difference in initial happiness. To rule out this explanation, we included the initial happiness as a covariate in regressions whenever hedonic adaptation was involved in all studies. Not including initial happiness as a covariate does not meaningfully change any of the primary results. Specifically, a linear regression of change in happiness on source (0 = purchase, 1 = gift), category level dummy variables, the natural log of cost and happiness measured at Part 1, with clustered robust $SE$s, revealed a significant effect of source ($B = .56, SE = .18, t(114) = 3.05, p = .003$), indicating that participants adapted to gifts more slowly than to purchases. As can be seen in Figure 3, we found that happiness with purchases significantly decreased over time ($M_{\text{Part 1}} = 9.29$ vs. $M_{\text{Part 2}} = 8.69; t(148) = 4.87, p < .001$), whereas happiness with gifts did not ($M_{\text{Part 1}} = 9.40$ vs. $M_{\text{Part 2}} = 9.29; t(257) = 1.09, p = .28$), indicating that participants adapted to purchases, but not gifts. Finally, because the WTA of the items was positively skewed, we performed a similar regression of the natural log of WTA and found a significant effect of source (untransformed WTA: $\text{Median}_{\text{gift}} = $30 vs. $\text{Median}_{\text{purchase}} = $25; $B = .45, SE = .19, t(112) = 2.41, p = .02$), indicating that participants demanded a higher selling price for gifts than for purchases. When all previous analyses are run without these statistical controls, our results do not differ in any meaningful way.

Figure 3. Initial and current happiness with gifts and purchases in Study 2.
This is true for all of our studies. In addition, instead of creating a difference score and using that as our dependent measure, we also analyze all of our data across all of our studies (where appropriate) using mixed models with time as a within-subjects factor and the manipulation in question as a between-subjects factor. Using this different analytical approach does not alter either the substantive or statistical conclusions in any of our studies, and, as such, we report the difference-score dependent measure approach for simplicity’s sake.

Mediation analysis. To test the mediating role of sentimental value on the relationship between the source of the item and hedonic adaptation, we conducted two mediation analyses with clustered robust SEs while controlling for category level dummy variables the natural log of cost and happiness measured at Part 1. The first mediation analysis was performed using change in happiness as the dependent variable. Following Model 4 outlined by Hayes (2013), we found a direct effect of source (purchase vs. gift) on sentimental value ($B = .62, SE = .25, t(114) = 2.52, p = .01$), and a significant total effect of source on change in happiness ($B = .56, SE = .18, t(114) = 3.05, p = .003$). More important, when we added sentimental value to the model, the effect of source on change in happiness decreased ($B = .34, SE = .17, t(114) = 2.08, p = .04$), whereas the effect of sentimental value on change in happiness remained significant ($B = .36, SE = .05, t(114) = 7.59, p < .001$). Finally, the bootstrap estimate (.22) for the overall model differed from zero at the 95% confidence interval (CI) [.09,.35], indicating that sentimental value mediated the effect of source on change in happiness with the items.

The second mediation analysis was performed using the natural log of WTA as the dependent variable. We found a direct effect of source (purchase vs. gift) on sentimental value ($B = .62, SE = .25, t(114) = 2.52, p = .01$), and a significant total effect of source on WTA ($B = .45, SE = .19, t(112) = 2.41, p = .02$). More important, when we added sentimental value to the model, the effect of source on WTA decreased ($B = .31, SE = .16, t(112) = 1.94, p = .06$), whereas the effect of sentimental value on WTA remained significant ($B = .22, SE = .04, t(112) = 4.91, p < .001$). Finally, the indirect effect (.13) for the overall model differed from zero at the 95% CI [.04,.23], indicating that sentimental value mediated the effect of source on WTA of the items.2

Discussion

The results of this study demonstrate the role that sentimental value plays in hedonic adaptation. Specifically, we observe that items individuals received as gifts tend to exhibit slower rates of hedonic adaptation as compared to similar items individuals purchased for themselves, because gifts are more sentimentally valuable. This study provides compelling evidence for the slowing role of sentimental value in hedonic adaptation, but it has two limitations. First, one may argue that the results of this study were driven by a demand characteristic; participants felt unwilling to state that their happiness with gifts decreased with time, even though it actually did. In addition, participants may have felt awkward putting a WTA value on gifts, because doing so might seem taboo (Tetlock, Kristel, Elson, Green, & Lerner, 2000). To rule out this explanation, we conducted Study 3 where none of the stimuli were gifts, and demand was less likely to be a concern.

Second, though we tried our best to statistically control for item category, the observed effect on adaptation rate may still be because of differences in items and even item models (e.g., iPhone 4 vs. iPhone 5). These concerns are mitigated by the fact that sentimental value mediated the relationship between our independent variable and change in happiness, suggesting that even if the objects differed across conditions in terms of their typical adaptation rates, collapsing across conditions, sentimental value is still a strong predictor of hedonic adaptation. To further address these concerns, we conducted Studies 3–5 where we used identical stimuli across conditions.

Study 3

Study 3 serves four main purposes. First, it tests the generalizability of the findings of Study 2 by showing that the effect of sentimental value on hedonic adaptation extends to a new domain, photographs, and is not limited to gift exchanges. Second, the study helps address the issue of demand characteristic in Study 2 by using a context where demand is unlikely to manifest. Third, Study 3 uses a different method to control for the differences in stimuli. Instead of independent coders sorting items into different categories and statistically controlling for these categories, this study uses a yoked design to control for any differences in stimuli. In doing so, participants assigned to the high sentimental value condition are exposed to the exact same items as those in the low sentimental value condition; thus, ruling out concerns about differences that items purchased versus received as gifts may exhibit. Fourth, this study provides initial evidence that sentimental value does not decline with time.

Method

Participants. Two hundred Americans (90 females; $M_{age} = 34.66, SD = 11.65$) from the Amazon mTurk online panel completed a survey in exchange for $1.00.

Procedure. This study used a yoked design such that participants in the high sentimental value condition identified stimuli that were highly sentimentally valuable to them and then those exact stimuli were presented to other individuals who presumably did not derive any sentimental value from the items. Specifically, participants in the high sentimental value condition were told “please think of a place that has a beautiful view and also has lots of sentimental value to you. It could be a city, a beach, a restaurant, a garden, a river, a wood, a fall, a canyon, a park, and so on.” To ensure participants clearly understood what sentimental value is, we offered our definition to everyone in this study before they identified a location. Specifically, participants were told: "As you

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2 We also tested two reverse mediation models. The first one tested whether change in happiness mediated the effect of source on sentimental value, and the second one tested whether WTA mediated the effect of source on sentimental value. The indirect effects of both the first model (.30, 95% CI [.12,.48]) and the second model (.21, 95% CI [.09,.34]) were significant, suggesting that change in happiness and WTA can serve as mediators in predicting the influence of source on sentimental value. In part, this is driven by the high correlations between change in happiness and sentimental value, $r = .30, p < .001$ and between WTA and sentimental value, $r = .44, p < .001$. As will be evident, this type of reverse mediation is not the norm in the remainder of our studies.
may know, sentimental value is the value derived from associations with a significant other (e.g., a family member, a romantic partner or a close friend) and associations with a special event or time (e.g., graduation, wedding, vacation).” Participants were then tasked with finding a photograph of the place they previously identified by using Google Image Search. Detailed instructions with step-by-step screenshots were provided to ensure that all participants would be able to complete the task. Once participants found an appropriate photograph, they downloaded it to their local computers and then uploaded it to the system that administered the experiment. 

Next, to ensure that the uploaded photograph indeed had sentimental value to these participants, they indicated whether the photograph had sentimental value to them or not by simply answering with a “Yes” or a “No.” Only participants who indicated “Yes” were allowed to proceed with the study (94.3% indicated “Yes”). Next, participants viewed the photograph they had uploaded six times (10 s each time) in a row. After the first and last iterations, participants indicated their happiness with viewing the photograph (0 = not happy at all, 100 = very happy), and the sentimental value of the photograph (1 = none at all, 100 = very much).

Participants in the low sentimental value condition were yoked to participants in the high sentimental value condition such that they followed the exact same procedure as those in the high sentimental value condition, except that rather than identifying, finding, and uploading a sentimentally valuable photograph, they were randomly, without replacement, presented with one of the photographs that participants in the high sentimental value condition previously uploaded. This way, participants in the low sentimental value condition were exposed to the same stimuli as participants in the high sentimental value condition. Before the start of the study, participants were shown the photograph and only those who indicated that it was not sentimentally valuable (“No”) were allowed to proceed (75.6% indicated “No”). This was done to ensure that photographs were not unintentionally sentimentally valuable to participants in the low sentimental value condition, because it is possible that, by chance, the photographs that they were exposed to had sentimental value to them (e.g., they had their honeymoon in Tahiti and were shown a photograph of Tahiti). After this, participants saw the photograph six times and answered the same questions as participants in the high sentimental value condition.

Results

Sentimental value. Participants in the high-sentimental value condition reported that the item had more sentimental value than those in the low-sentimental value condition after both the first (M_{high sentimental value} = 86.05 vs. M_{low sentimental value} = 9.52; t(198) = 38.31, p < .001) and the last iteration (M_{high sentimental value} = 85.93 vs. M_{low sentimental value} = 9.60; t(198) = 36.59, p < .001). Consistent with our theorizing, sentimental value did not decrease with time in either condition (high-sentimental value condition: M_{first rating} = 86.05 vs. M_{last rating} = 85.03; t(99) = .18, p = .86; low-sentimental value condition: M_{first rating} = 9.52 vs. M_{last rating} = 9.60; t(99) = .12, p = .90; see Figure 4, top panel).

Happiness. As can be seen in Figure 4 (bottom panel), there was a large difference in initial happiness with the photographs across conditions, such that participants in the high sentimental value condition were happier with the photograph after the first iteration as compared to participants in the low sentimental value condition (M_{high sentimental value} = 86.76 vs. M_{low sentimental value} = 59.71; t(198) = 10.28, p < .001). This is unsurprising because the photographs that were aesthetically and sentimentally valuable to participants in the high sentimental value condition are less likely to be as aesthetically valuable to those in the low sentimental value condition. On the surface, this appears to be a problem with this experiment. However, there are two reasons to believe otherwise. First, recent research has shown that satiation, a related phenomenon to hedonic adaptation, occurs more quickly when initial enjoyment levels are high (DePaoli & Khan 2015). That is, if anything, this research suggests that we should observe high levels of hedonic adaptation in the high sentimental value condition because the initial level of happiness is quite high. Our prediction, however, is precisely opposite to this, and so if we observe a smaller decline in happiness in the high sentimental value condition than in the low sentimental value condition, it would not be the difference in the initial level of happiness that is driving this result. Second, as aforementioned, in all of our experiments, we statistically control for initial levels of happiness to rule out any such differences in initial happiness’ influence on hedonic adaptation. In the present experiment, we do just this. It is worth noting that in no case does our result meaningfully change if we exclude this statistical control.

All that said, to determine the rate of hedonic adaptation, we subtracted the first happiness ratings from the last happiness rat-
ings. This resulted in a measure of change in happiness across time and served as our measure of hedonic adaptation. Negative values represent decreases in happiness, while positive values represent increases in happiness. A linear regression of change in happiness on condition (0 = low sentimental value, 1 = high sentimental value), while controlling for the first happiness rating revealed a significant effect of condition (B = 4.14, SE = 2.08, t(197) = 2.00, p = .047), indicating that participants in the high sentimental value condition adopted to photographs more slowly than participants in the low sentimental value condition. As can be seen in the bottom panel of Figure 4, we found that happiness with the photographs significantly decreased over time both for participants in the low sentimental value condition (Mfirst rating = 59.71 vs. Mlast rating = 51.96; t(99) = 5.32, p < .001) and the high sentimental value condition (Mfirst rating = 86.76 vs. Mlast rating = 84.99; t(99) = 2.11, p = .038), but did so to a lesser extent in the high sentimental value condition.

Mediation analysis. We conducted a mediation analysis to test whether sentimental value mediates the effect of the photograph manipulation on hedonic adaptation while controlling for the first happiness rating. We used change in happiness as the dependent variable. Specifically, we found a direct effect of the photograph manipulation on sentimental value (B = 68.86, SE = 2.42, t(197) = 28.36, p < .001), and a significant total effect of the photograph manipulation on change in happiness (B = 4.14, SE = 2.08, t(197) = 2.00, p = .047). More important, when we added sentimental value to the model, the effect of the photograph manipulation was eliminated (B = −3.50, SE = 4.65, t(196) = .75, p = .45), whereas the effect of sentimental value on change in happiness was marginally significant (B = .11, SE = .06, t(196) = 1.83, p = .068). Finally, the indirect effect (.75) for the overall model differed from zero at the 95% CI [.44, 1.48], indicating that sentimental value mediated the effect of the photograph manipulation on change in happiness with the photograph.3

Discussion

The present study replicated the slowing effect of sentimental value on hedonic adaptation by comparing people’s happiness with photographs that have high sentimental value versus photographs that have low sentimental value. Specifically, we found that people adapt to photographs of sentimentally valuable places more slowly than to photographs of sentimentally valueless places. Moreover, this study provides initial evidence that sentimental value does not tend to fade over.

The present study also helps to address some of the limitations of Study 2. First, this study ruled out demand as an alternative explanation. Unlike Study 2, the stimuli in this study were not gifts, but photographs taken by an anonymous person and found on the Internet. It is unlikely that reporting a decrease in happiness for a photograph that was taken by another person is particularly taboo. Second, this study held the photographs constant across conditions by using a yoked procedure. Therefore, the slowing effect of sentimental value on hedonic adaptation cannot be attributed to differences in the features of the items themselves, as could be possible in the previous study.

Study 4

Study 3 tested the slowing effect of sentimental value on hedonic adaptation over a rather short period of time (minutes). Study 4, expands on this finding by testing this effect over a span of 9 months. Additionally, rather than using a yoked design, this study experimentally imbues objects with sentimental value, thus allowing us to keep the object itself constant for all participants. Specifically, participants receive the exact same object as a gift either from their romantic partner or from the experimenter. We predict that gifts from a romantic partner will be more sentimentally valuable than those from the experimenter and that this increased sentimental value will lead to slower rates of hedonic adaptation as measured 3 months and even 9 months later.

Method

Fifty-seven heterosexual romantic couples (Mage = 20.55, SD = .83) from a large Chinese University participated in a “personality survey” in exchange for 3 yuan (around $0.50 USD) and a gift. To recruit as many student couples as possible, study ads were posted on numerous bulletin boards around campus. In addition, research assistants actively approached students who looked like couples on campus and informed them of the study. Individual sessions were then scheduled with each couple who was interested in participating. The study consisted of three parts.

Part 1. Each romantic couple arrived at the lab together, but each member of the couple was seated at opposite ends of the room with dividers separating them to ensure that their responses would not be influenced by one another. They were then instructed to complete a 33-item personality test that consisted of 30 filler questions from the Big Five Personality Inventory (John, Donahue, & Kentle, 1991) and three additional questions that measured the strength of their romantic relationship. Specifically, they indicated to what extent they agree or disagree with the following statements: “I am in a very stable relationship with my partner,” “I rarely fight/argue with my partner,” and “I feel very happy when I am with my partner” (1 = extremely disagree, 9 = extremely agree.)

Next, each participant was told that in addition to their fee for showing up, they would receive an item as thanks for participating in the study. The way in which this item was given to them, however, varied as a function of condition. Specifically, participants in the low-sentimental value condition were told: “Thank you for your participation. You also get a reward.” Each male participant was then given a calendar toy and each female participant was given a man-made grass toy (see Appendix D).

In contrast, participants in the high-sentimental value condition were told: “Thank you for your participation. You also get an opportunity to choose between two gifts.” The gifts were placed inside two opaque boxes labeled “for myself” and “for my partner.” Participants could not see inside the boxes, nor did they know

3 We also tested reverse mediation to see whether change in happiness mediated the effect of the photograph manipulation on sentimental value. Though the indirect effect (.63) was significant (95% CI [.07, 1.73]), the effect of the photograph manipulation remained highly significant (B = 68.23, SE = 2.44, t(196) = 27.99, p < .001) after controlling for change in happiness. This result suggests that this alternative model is less effective in explaining the observed variance of the DV.
what was inside. All they knew was that there were two different types of items. They were further told that they could either get a gift for themselves (the one inside the for myself box) or give a gift to their partner (the one inside the for my partner box), but not both. To ensure that participants in both conditions received the same item, male participants in the high-sentimental value condition always had the calendar toy in the box labeled for myself and the grass toy in the box labeled for my partner, and female participants always had the opposite. This way, if both participants chose to have their partners receive the gift, men would always receive the calendar toy and women would always receive the grass toy, just like participants in the low-sentimental value condition. It is worth noting that participants were unaware of what their partners were doing throughout the entire study, so a participant’s decision to either get a gift for themselves or to give it to their partner was made before knowing if their partner chose the gift for themselves or opted to give the gift to their partner.

Depending on the choices made by the participants, one of three scripts was followed. First, if both participants chose to give the gift to their partner, the experimenter asked them to both simultaneously walk to the middle of the room to exchange gifts and said, “Both of you have chosen the gifts for your partners rather than for yourselves. Now, please take a moment and give your gifts to your partners.” Then, the male participant handed the grass toy to the female participant and the female participant handed the calendar toy to the male participant. Second, if one partner chose the gift for him- or herself, and the other partner chose the gift for his or her partner, the experimenter told the participant who chose the gift for the self to leave the gift in his or her cubicle, and then walk to the middle of the room to accept the gift from his or her partner. To eliminate any suspicion that one’s partner chose the gift for him- or herself, which may negatively influence their relationship, the experimenter told the participants that the questionnaires they completed were different. In this situation, the participant who received no gifts (i.e., he or she chose to give a gift to his or her partner while the partner chose to get a gift for him- or herself) would receive the item as a reward from the experimenter. Third, if both participants chose the gift for themselves, there would be no gift exchange. Participants would stay in their cubicles during the entire session.

Next, regardless of condition, all participants privately indicated how happy they were with the item that they received (1 = not happy at all, 9 = very happy). For those who received more than one gift, they reported their happiness with both gifts. Finally, all participants answered a few demographic questions and were told that the experimenter would contact them when a follow-up survey was available, and, by completing the follow-up survey, they would earn an opportunity to win 100 yuan (around $16 USD). No numbers refused to take the survey for different reasons. In Part 3, 51 (45%) responses for Part 3. The response rate was low because participants graduated a few months after Part 2 and changed their cellphone numbers after they found jobs in different cities to avoid being charged long distance rates (a common practice in China). In addition, a few participants who did not change their numbers refused to take the survey for different reasons. In Part 3, participants indicated their happiness with the gift, sentimental value of the gift, and whether they still possessed the gift (all on the same scales as used before). They also answered a few other questions that were part of a different research project.

Results of Part 1 and Part 2

We first report the results of Parts 1 and 2. Three couples were no longer in committed relationships by the time of the second part of the study took place (one in the high-sentimental value condition, two in the low-sentimental value condition). During the first part, among the 28 couples who were in the high-sentimental value condition, both members of 26 of the couples chose to give the gift to their partner. Two couples had one participant who chose for the partner, and one who chose for the self. We excluded these two couples from the subsequent analyses. We also excluded one participant who no longer possessed the gift. These exclusions resulted in usable data from 51 individuals in the high-sentimental value condition and 58 individuals in the low-sentimental value condition. More important, these exclusions had no substantive effects on the interpretation of any of our results. In this study, because participants received different gifts depending on their gender, we statistically controlled for the type of gifts in all our analyses. Moreover, because participants’ responses may be correlated with their partners’ responses, we conducted all the analyses using regression with clustered robust SEs to allow for the possibility that partner responses were correlated.

Sentimental value. We first regressed sentimental value on gift source (0 = from the experimenter, 1 = from the partner) and the gift dummy variable (0 = man-made grass toy, 1 = calendar toy) with clustered robust SEs. We observed a significant effect of source ($B = 1.90, SE = .29, t(54) = 6.62, p < .001$), indicating that gifts received from romantic partners had higher sentimental value than gifts received from the experimenter.

Happiness. A regression of change in happiness on gift source (0 = from the experimenter, 1 = from the partner), the gift dummy variable and happiness measured at Part 1 with clustered robust SEs revealed a significant effect of source ($M_{\text{romantic partner}} = -.18$ vs. $M_{\text{experimenter}} = -1.45; B = 1.63, SE = .25, t(54) = 6.46, p < .001$), indicating that participants’ happiness with gifts from their partners faded more slowly than with gifts from the experimenter. As can be seen in Figure 5, although the happiness with items from the experimenter significantly decreased over time ($M_{\text{Part 1}} = 8.21$ vs. $M_{\text{Part 2}} = 6.76; t(57) = 5.74, p < .001$), the happiness with
gifts from their partners did not \((M_{Part\,1} = 8.73 \text{ vs. } M_{Part\,2} = 8.55; t(50) = 1.22, p = .23)\).

**Willingness to accept.** Accordingly, we analyzed these data in two ways. First, we compared the percentage of participants who did not want to sell the item across conditions. Significantly more participants in the high sentimental condition (45.1%) said that they did not want to sell the item than those in the low sentimental condition (17.2%), \(\chi^2(1) = 9.98, p = .002\). In other words, participants who received gifts from their romantic partner were far less willing to part with the gift at any price, as compared with those who received the item from the experimenter. Second, we performed a log transformation on the WTA indicated by participants who were willing to sell the item, and then regressed it on source (0 = from the experimenter, 1 = from the partner) and the gift dummy variable with clustered robust SEs. The results revealed a significant effect of source (\(Median_{\text{romantic partner}} = 350 \text{ yuan (~$40.32)}\) vs. \(Median_{\text{experimenter}} = 20 \text{ yuan (~$3.23)}\); \(B = 3.02, SE = .78, t(47) = 3.85, p < .001\)), indicating that participants demanded a higher selling price for the gifts from their partners than for the rewards from the experimenter.

**Other measures.** The measure of relationship strength indicated that the couples were generally in very good relationships (Part 1: \(M_{\text{romantic partner}} = 7.10 \text{ vs. } M_{\text{experimenter}} = 7.34; t(107) = .91, p = .37\); Part 2: \(M_{\text{romantic partner}} = 7.51 \text{ vs. } M_{\text{experimenter}} = 7.30; t(107) = .78, p = .44\)). To examine the change in relationship strength, we subtracted Time 1 relationship strength ratings from Time 2 relationship strength ratings. A linear regression of this new measure on source and the gift dummy variable revealed no significant effect, indicating that the change in relationship strength did not differ across conditions.

**Mediation analysis.** We conducted two mediation analyses to test whether sentimental value mediates the effect of source on hedonic adaptation. First, we conducted regressions with clustered robust SE (while controlling for the gift dummy variable and happiness measured at Part 1) using change in happiness as a dependent variable. Specifically, we found a direct effect of gift source on sentimental value (\(B = 1.64, SE = .27, t(54) = 6.03, p < .001\)), and a significant total effect of gift source on change in happiness (\(B = 1.62, SE = .25, t(54) = 6.46, p < .001\)). More important, when we added sentimental value to the model, the effect of gift source decreased (\(B = 1.15, SE = .33, t(54) = 3.53, p = .001\)), whereas the effect of sentimental value on change in happiness remained significant (\(B = .29, SE = .13, t(54) = 2.17, p = .03\)). Finally, the indirect effect (.48) for the overall model differed from zero at the 95% CI [.12, .83], indicating that sentimental value mediated the effect of gift source on change in happiness.

As a secondary analysis, we conducted regressions with clustered robust SE (while controlling for the gift dummy variable) using the natural log of WTA as dependent variable. Specifically, we found a direct effect of gift source on sentimental value (\(B = 1.64, SE = .27, t(54) = 6.03, p < .001\)), and a significant total effect of gift source on WTA (\(B = 2.88, SE = .78, t(47) = 3.70, p = .001\)). More important, when we added sentimental value to the model, the effect of gift source decreased (\(B = 2.15, SE = .74, t(47) = 2.90, p = .006\)), whereas the effect of sentimental value on WTA remained significant (\(B = .45, SE = .15, t(47) = 3.00, p = .004\)). Finally, the indirect effect (.73) for the overall model differed from zero at the 95% CI [.13, 1.34], indicating that sentimental value mediated the effect of gift source on WTA of the items.4

**Results of Part 1, Part 2, and Part 3**

We next report the results based on participants who completed all three parts of the study. As discussed before, our exclusion criteria yielded usable data from 51 participants in the high-sentimental value condition and 58 participants in the low-sentimental value condition in the first two parts. Among these participants, 48 participants completed Part 3 (27 from the high-sentimental value condition and 21 from the low-sentimental value condition). One of these participants did not possess the gift anymore and thus was excluded from subsequent analyses, resulting in 47 usable responses.

**Sentimental value.** Participants in the high-sentimental value condition reported that the item had more sentimental value than those in the low-sentimental value condition, both during Part 2 (\(M_{\text{romantic partner}} = 8.31 \text{ vs. } M_{\text{experimenter}} = 6.95; t(45) = 3.03, p = .004\)) and Part 3 (\(M_{\text{romantic partner}} = 8.35 \text{ vs. } M_{\text{experimenter}} = 6.90; t(45) = 2.81, p = .007\)), indicating that the manipulation successfully changed sentimental value over a 9 month period. Consistent with our theorizing, sentimental value did not decrease with time in either condition (i.e., when from the partner: \(M_{Part\,2} = 8.31 \text{ vs. } M_{Part\,3} = 8.35; t(25) = .17, p = .87\); when from the experimenter: \(M_{Part\,2} = 6.95 \text{ vs. } M_{Part\,3} = 6.90; t(20) = .07, p = .94\); see Figure 6, top panel).

**Happiness.** A regression of change in happiness on gift source (0 = from the experimenter, 1 = from the partner), the gift dummy variable (0 = man-made grass toy; 1 = calendar toy) and happiness measured at Part 1 with clustered robust SEs, revealed a significant effect of source (\(B = 1.13, SE = .45, t(33) = 2.52, p = .017\)), indicating that participants’ happiness with gifts from their partners faded more slowly than with gifts from the experimenter, even over 9 months. This was true despite the fact that happiness differed from zero at the 95% CI [.12, .83], indicating that sentimental value mediated the effect of gift source on change in happiness.

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4 We also tested two reverse mediation models. The first one tested whether change in happiness mediated the effect of source on sentimental value, and the second one tested whether WTA mediated the effect of source on sentimental value. The indirect effects of both the first model (.54, 95% CI [.12, .96]) and the second model (.54, 95% CI [.08, 1.01]) were significant, suggesting that change in happiness and WTA can serve as mediators. As with Study 2 in part, this is driven by the high correlations between change in happiness and sentimental value, \(r = .24, p = .01\) and between WTA and sentimental value, \(r = .48, p < .001\).
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**Figure 6.** (Top Panel): Sentimental value measured at Part 2 and Part 3 by participants who completed all three parts in Study 4. (Bottom Panel): Initial and current happiness with items of participants who completed all three parts in Study 4. Note: Error bars represent SEs.

with the item significantly decreased over time in both conditions (when from the partner: $M_{Part~1} = 8.69$ vs. $M_{Part~3} = 8.19; t(25) = 2.69, p = .013$; when from the experimenter: $M_{Part~1} = 8.67$ vs. $M_{Part~3} = 7.05; t(20) = 3.89, p = .001$; see Figure 6, bottom panel).

**Discussion**

This study further demonstrates the mitigating role that sentimental value has on hedonic adaptation. Unlike Studies 2 and 3, Study 4 uses a paradigm where we imbue an item with sentimental value in the lab rather than asking participants to list items that tend to have high sentimental value (e.g., gifts or purchases that commemorate a special event) or using a yoked design. Moreover, consistent with our theorizing, sentimental value is invariant across a 6-month period (Part 2 to Part 3), and the influence of sentimental value on hedonic adaptation spans at least 9 months.

**Study 5**

Having demonstrated that sentimental value slows hedonic adaptation across both very short (~1 min) and very long (~9 months) time periods, we now turn to explaining why sentimental value has such an effect. Specifically, we claim that sentimental value shifts attention away from the features of an object and towards the associations that that object possesses. Because happiness with associations tends not to fade with time, while happiness with features does tend to fade with time, such a shift precipitates a reduction in hedonic adaptation. To that end, we collected thought protocols for individuals exposed to both high and low sentimental objects and tested to see if this shift in attention to associations is what leads to sentimental value’s mitigating influence on hedonic adaptation.

**Method**

**Participants.** Two hundred Americans (93 females; $M_{age} = 33.91, SD = 10.87$) from the Amazon mTurk online panel completed a survey in exchange for $1.0.

**Procedure.** This study was a direct replication of Study 3 (photographs) except for one major difference. To capture participants’ spontaneous thoughts about the photographs that they are exposed to, immediately after the first iteration, participants listed all the thoughts they had when they viewed the photograph. At the end of the study, following all six iterations of exposure and all dependent measures, participants were shown the thoughts that they previously listed and asked to indicate whether their thoughts mentioned a significant other, a special event or time, and/or the features of the photograph (i.e., quality, dimension, and design of the photograph, and the objects, places or views in the photograph) on separate 4-point scales (1 = none, 4 = a lot).

**Results**

**Sentimental value.** Participants in the high-sentimental value condition reported that the item had more sentimental value than those in the low-sentimental value condition both after the first iteration ($M_{high~sentimental~value} = 87.80$ vs. $M_{low~sentimental~value} = 17.92; t(198) = 27.59, p < .001$), and the last iteration ($M_{high~sentimental~value} = 87.63$ vs. $M_{low~sentimental~value} = 19.95; t(198) = 24.09, p < .001$). Consistent with our theorizing, sentimental value did not decrease with time in either condition (i.e., in the high-sentimental value condition: $M_{first~rating} = 87.80$ vs. $M_{last~rating} = 87.63; t(99) = .26, p = .80$; in the low-sentimental value condition: $M_{first~rating} = 17.92$ vs. $M_{last~rating} = 19.95; t(99) = 1.59, p = .12$; see Figure 7, top panel).

**Happiness.** To determine the rate of hedonic adaptation, we subtracted the first happiness ratings from the last happiness ratings. This resulted in a measure of change in happiness across time and served as our measure of hedonic adaptation. Negative values represent decreases in happiness, while positive values represent increases in happiness. A linear regression of change in happiness on condition (0 = low sentimental value, 1 = high sentimental value) while controlling for the first happiness rating revealed a significant effect of condition ($B = 4.97, SE = 2.24, t(197) = 2.22, p = .028$), indicating that participants in the high sentimental value condition adapted to photographs more slowly than participants in the low sentimental value condition. As can be seen in the bottom panel of Figure 7, we found that happiness with the photographs significantly decreased over time for both participants in the low sentimental value condition ($M_{first~rating} = 63.99$ vs. $M_{last~rating} = 58.61; t(99) = 3.49, p = .001$), and participants in the high sentimental value condition ($M_{first~rating} = 90.34$ vs. $M_{last~rating} = 88.12; t(99) = 2.44, p = .016$), but did so to a far lesser extent in the high sentimental value condition.

**Thoughts.** To understand participants’ spontaneous thoughts about the photos, we asked participants to list all the thoughts they had when they saw the photograph and then rate to what extent their thoughts were related to a significant other, a special event or...
in hedonic adaptation. Specifically, we predict that the degree of association related thoughts that one has when exposed to a stimulus influences the degree of sentimental value that that object possess and this, in turn, is what reduces the rate of hedonic adaptation. To test this we conducted a two stage mediation analysis following Model 6 outlined by Hayes (2013) while controlling for the first happiness rating. As can be seen in Figure 8, we found a direct effect of the photograph manipulation on association related thoughts ($B = 1.15$, $t(197) = 7.98, p < .001$), a direct effect of the number of association related thoughts generated on sentimental value ($B = 5.11$, $t(196) = 3.08, p = .002$), and a direct effect of the photograph manipulation on sentimental value ($B = 54.99$, $t(196) = 14.21, p < .001$). More important, though the total effect of photograph manipulation on change in happiness was significant ($B = 4.97$, $t(197) = 2.22, p = .028$), this effect dropped below the conventional level of significance ($B = -5.32$, $t(195) = 1.52, p = .13$) when the number of association related thoughts ($B = -1.77$, $t(195) = 1.63, p = .10$) and sentimental value ($B = .20$, $t(195) = 4.46, p < .001$) were added to the model. Finally, the bootstrap estimates for three indirect paths differ from zero. Specifically, one indirect effect passes through both association related thoughts and sentimental value, and has a value of 1.19, with a 95% BC CI of .35 to 2.63; one indirect effect carries the effect of the photograph manipulation on change in happiness through sentimental value only, and has a value of 11.13, with a 95% CI of 3.58 to 19.91; the third indirect effect passes only through association related thoughts and has a value of $-2.03$, with a 95% BC CI of $-4.70$ to $-3.7$.5

Study 6

The previous study demonstrated that the effect of sentimental value on hedonic adaptation is driven by a shift in focus away from the features of an object and towards the associations that the object possesses. It is this shift that is responsible for reduction in hedonic adaptation. However, what we have yet to show is how this reduction actually unfolds. Our theorizing predicts that sentimental value reduces the influence that the reduction in feature related utility has on hedonic adaptation. That is, even though feature-related utility decreases over time for all items, such a decrease has a smaller influence on happiness for items that are highly sentimentally valuable than for items that are not. To that end, the present study tests this proposition that sentimental value acts as a buffer against the influence of the decline in feature-related utility on happiness. Specifically, we asked participants to recall items that, at the time of acquisition, were either highly or minimally sentimentally valuable. Though this methodology is subject to memory biases (Schacter, 2002), it is not the case that people are unable to retrospect about items that varied in sentimental value. They may imperfectly remember the degree of, say, sentimental value, but it is unlikely that they misremember which items had much (e.g., a gift from a loved one) versus little (e.g., a new TV purchased for the self) sentimental value.

5 We also tested a reverse mediation model in which association related thoughts and change in happiness were used as mediators. The indirect effect ($-39$ that passes through association related thoughts and change in happiness was not significant (95% CI $[-1.67, .34]$, suggesting that change in happiness cannot serve as a mediator.
at acquisition. Accordingly, though the precise point estimates we ultimately obtain may be subject to memory bias, the differences observed across conditions are likely to maintain their relative ordering. That is, objects that participants remember as having been highly sentimentally valuable are likely to actually have been highly sentimentally valuable, even if the precision of their response to our measures may be somewhat biased. The same is likely to be true for objects that participants remembered as having been un-sentimentally valuable. Moreover, to the extent that any results we observe are consistent with the previous six studies, issues of memory bias are less likely to be a concern.

Method

Participants. Two hundred and thirty five Americans (111 females; M_{age} = 32.57, SD = 10.88) from the Amazon mTurk online panel completed a survey in exchange for $0.50.

Procedure. Participants were randomly assigned to recall a nonconsumable item that was worth at least $50 and made them happy when they acquired it. Specifically, participants in the high sentimental value condition were instructed to recall an item that had lots of sentimental value to them at the time when they acquired it. Those in the low sentimental value condition were instructed to recall an item that had no sentimental value to them at the time when they acquired it and ever since. To ensure participants clearly understood what sentimental value was, we offered our definition to everyone in this study. All participants then provided a brief description of the item.

Next, participants indicated how happy they were with the item when they acquired it and at present on two separate scales (1 = not happy at all, 7 = very happy); the order of these two questions was counterbalanced. Order did not yield significantly different results and thus was will be not further discussed. To capture participants’ spontaneous thoughts about the item, we asked participants to list all the thoughts they typically had when they used, saw, or thought about the item. On the next page, they were shown their own thoughts and asked to indicate whether their thoughts mentioned a significant other, a special event or time, and any product features of the item, respectively (1 = none, 4 = a lot). Next, participants indicated how much sentimental value the item had to them both when they acquired it and at present on two separate scales (1 = not at all, 7 = very much). They also indicated how much feature-related utility the item had to them both when they acquired the item, and at present. Specifically, to ensure that participants understood the questions, we provided them with a definition of feature-related utility (“Feature-related value is value derived from product features [e.g., the appearance, functions, and specifications]”) and then asked them two questions: “At the time you acquired this item, how much feature-related value (as opposed to sentimental value) did this item have to you?”, and “Right now, how much feature-related value (as opposed to sentimental value) did this item have to you?” They answered each question on a 7-point scale (1 = none at all, 7 = very much).

Finally, participants reported how they acquired the item (1 = I bought it, 2 = I received it from others, 3 = other), the cost of the item, how long ago they had acquired the item, and the product category of the item (by choosing from the eight final categories listed in Appendix B). At the end, to check whether participants paid attention to the instructions, they indicated whether they were instructed to recall an item that had lots of sentimental value when they acquired it or no sentimental value.

Results

Seventeen participants answered the attention check question incorrectly and, therefore, were excluded from the subsequent analyses. Including these participants does not meaningfully change any of our conclusions.

Items. There was a significant difference between conditions in what items participants recalled (χ² (7) = 53.18, p < .001; see Appendix B), as well as a significant difference between conditions in the length of ownership (M_{high} = 26.30 months vs. M_{low} = 26.30 months; t(216) = 6.06, p < .001). Because the cost of the items was skewed, we performed a log transformation and used the natural log of the cost in our data analysis. There was no significant difference in transformed cost (untransformed cost: Median_{high} = $200.00 vs. Median_{low} = $162.50; t(215) = 1.30, p = .20). In the subsequent analyses we statistically control for the category level dummy variables, length of ownership, and the natural log of cost.

Sentimental value. Participants in the high-sentimental value condition reported that the item had more sentimental value than those in the low-sentimental value condition, both at the time they acquired the item (M_{high} = 5.90 vs. M_{low} = 1.44; t(216) = 24.34, p < .001), and at the time they participated in the study (M_{high} = 6.55 vs. M_{low} = 1.72; t(216) = 33.57, p < .001). To examine the change in sentimental value, we subtracted the sentimental value ratings at acquisition from the sentimental value ratings at present. A linear regression of this new measure on the recall tasks (0 = low-sentimental value item, 1 = high-sentimental value item), the category level dummy variables, length of ownership, and the natural log of cost, revealed no significant effect of the recall task (B = .26, SE = .24, t(206) = 1.08, p = .28), indicating that sentimental value did not change at differential rates over time across conditions. Specifically, sentimental value for items that had high sentimental value at acquisition slightly increased with time (M_{at acquisition} = 5.90 vs. M_{at present} = 6.55; t(109) = 3.98, p < .001), as did sentimental value for items that had low sentimental value at acquisition (M_{at acquisition} = 1.44 vs. M_{at present} = 1.72; t(107) = 2.32, p = .02; Figure 9, top panel).

Happiness. A linear regression of change in happiness on the recall tasks (0 = low-sentimental value item, 1 = high-sentimental value item), category level dummy variables, length of ownership,
the natural log of cost and happiness at acquisition, revealed a significant effect of recall tasks (SE = .17, t(205) = 5.49, p < .001), indicating that participants adapted more slowly to highly sentimentally valuable items than to less sentimentally valuable items. As can be seen in Figure 9 (middle panel), happiness with low-sentimental items decreased over time (M_{at acquisition} = 6.16 vs. M_{at present} = 5.18; t(107) = 8.50, p < .001), whereas happiness with high-sentimental items decreased to a lesser extent (M_{at acquisition} = 6.65 vs. M_{at present} = 6.45; t(109) = 2.12, p = .04).

**Thoughts.** To understand participants’ spontaneous thoughts about the item, we asked participants to list all the thoughts they had when they saw, used or thought about the item and then rated to what extent their thoughts were related to a significant other, special event or time, and product features, respectively. A 2 (Recall: high-sentimental value item vs. low-sentimental value item) x 3 (Thoughts: related to a significant other vs. a special event or time vs. product features) ANOVA was conducted. This effect held even when we in addition controlled for change in sentimental value and change in feature-related utility. That is, the difference in hedonic adaptation was not caused by sentimental value or feature related utility changing differently across conditions.

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**Figure 9.** (Top Panel): Initial and current sentimental value of items in Study 6. (Middle Panel): Initial and current happiness with items in Study 6. (Bottom Panel): Initial and current feature related utility in Study 6. Note: Error bars represent SEs.
product features) mixed analysis of covariance (ANCOVA; controlling for the category level dummy variables, length of ownership, and the natural log of cost) revealed a significant Recall × Thoughts interaction, $F(1, 206) = 67.29, p < .001$. Consistent with our hypotheses, and with the results of Study 5, participants in the low sentimental value condition were far more likely to think about the features of the item ($M = 2.33$) than either the associations the item had with significant others ($M = 1.18$, paired-$t(107) = 10.36, p < .001$) or special events or times ($M = 1.07$, paired-$t(107) = 12.02, p < .001$). However, participants in the high sentimental value condition were instead less likely to think about the features of the item ($M = 1.70$) than either the associations the item had with significant others ($M = 3.02$, paired-$t(109) = 8.99, p < .001$) or special events or times ($M = 2.35$, paired-$t(109) = 4.60, p < .001$). In other words, sentimental value shifted attention away from the features of the items towards the associations the items possessed.

**Feature-related utility.** A linear regression of change in feature-related utility on the recall task ($0 =$ low-sentimental value item, $1 =$ high-sentimental value item), the category level dummy variables, length of ownership, and the natural log of cost, revealed no significant effect of recall task ($SE = .23, t(206) = -.35, p = .73$), indicating that feature related utility did not change at differential rates across conditions. As can be seen in Figure 9 (bottom panel), feature related utility significantly decreased over time for both the high-sentimental items ($M_{\text{at acquisition}} = 4.60$ vs. $M_{\text{at present}} = 4.20; t(107) = 3.56, p = .001$) and the low-sentimental items ($M_{\text{at acquisition}} = 6.30$ vs. $M_{\text{at present}} = 5.85; t(109) = 2.71, p = .008$).

**Mediation and moderation analysis.** We made three primary predictions regarding the joint influence of sentimental value and feature-related utility on hedonic adaptation. First, as in Study 5, the reason that sentimental value influences hedonic adaptation is because of the shift in focus away from the features of an item and towards the associations that that item possesses. More formally, we predict that association related thoughts and sentimental value mediates the effect of the recall task on the change in happiness. Second, in general, the greater the decrease in feature-related utility over time, the more a person will experience hedonic adaptation. Third, sentimental value moderates the influence of the change in feature-related utility on the change in happiness with an item. That is, even though feature-related utility decreases with time, happiness is less susceptible to such a decrease if the item has high sentimental value (versus low sentimental value). We lay out this model formally in Figure 10, and simultaneously test these predictions with a series of multiple regressions. More important, in testing this model, we mean centered sentimental value and change in feature-related utility to facilitate the interpretation of the regression coefficients and eliminate multicollinearity (Cohen, Cohen, West, & Aiken, 2013). Furthermore, as mentioned earlier, we controlled for the category level dummy variables, length of ownership, the natural log of cost and happiness at acquisition in all analyses.

Results revealed that all three predictions were supported. First, just like in Study 5, we show that sentimental value’s influence on hedonic adaptation is a function of a shift in focus towards association-related thoughts. To that end, we conducted a two stage mediation analysis following Model 6 outlined by Hayes (2013). We observed a direct effect of recall task (high-sentimental item vs. low-sentimental item) on association related thoughts ($B = 1.45, t(203) = 12.58, p < .001$), a direct effect of the number of association related thoughts generated on sentimental value ($B = .27, t(202) = 2.54, p = .01$), and a direct effect of recall task on sentimental value ($B = 4.04, t(202) = 17.36, p < .001$). More important, though the total effect of recall task on change in happiness was significant ($B = .88, t(203) = 5.60, p < .001$), this effect dropped below the conventional level of significance ($B = -.46, t(201) = 1.46, p = .15$) when the number of association related thoughts ($B = .01, t(201) = .07, p = .95$) and sentimental value ($B = .30, t(201) = 5.00, p < .001$) were added to the model. Finally, the bootstrap estimates for two of three indirect paths differ from zero. Specifically, one indirect effect passes through both association related thoughts and sentimental value, and has a value of .12, with a 95% BC CI of .04 to .26. The other indirect effect carries the effect of recall task on change in happiness through sentimental value only, and has a value of .12, with a 95% BC CI of .04 to .18.7

Second, as predicted, we observed that the greater the decrease in feature-related utility of an item, the more participants adapted to it ($B = .21, t(201) = 4.69, p < .001$). Finally, and most critical

7 Like Study 5, we tested whether association related thoughts and change in happiness mediated the effect of the recall task on sentimental value. The indirect effect (.05) that passes through association related thoughts and change in happiness was not significant (95% CI [−.04, .18]), suggesting that change in happiness cannot serve as a mediator.
to this study, the influence of change in feature-related utility on hedonic adaptation was moderated by the level of sentimental value ($B = -0.05, r(201) = 2.96, p = .004$). That is, when sentimental value was low, change in feature-related utility was highly associated with hedonic adaptation, but when sentimental value was high, the influence of feature-related utility on hedonic adaptation was mitigated. We also examined the simple correlation between change in feature-related utility and change in happiness by condition. Doing so, we found a strong positive correlation in the low sentimental value condition ($r = .43, p < .001$) such that the larger the decrease in feature-related utility, the larger the decrease in happiness, but no correlation in the high sentimental value condition ($r = .11, p = .25$). The difference in correlations was significant ($z = 2.54, p = .01$). In other words, change in feature-related utility strongly predicts change in happiness when an item has little sentimental value, but it has no predictive power when an item has lots of sentimental value.

**Sources of acquisition.** Studies 2–5 demonstrated that the influence of sentimental value on hedonic adaptation was robust to both gifts and nongifts. To further test that sentimental value’s influence on hedonic adaptation is not limited to only one such source (e.g., gifts), we examined participants’ responses to how they acquired the item in this study. Specifically, the percentages of purchases, gifts and other sources was 28.2, 70.0, and 1.8%, respectively, in the high-sentimental value condition, and 88.9, 10.2, and 0.9%, respectively, in the low-sentimental value condition. Though there was a significant difference in the proportion of acquisition types across conditions ($\chi^2(2) = 83.09, p < .001$), we did not find a difference in the influence of sentimental value on hedonic adaptation across gifts and purchases ($B = -.37, SE = .43, r(201) = .85, p = .40$). That is, the influence of sentimental value on adaptation remains statistically significant for both gifts ($B = .90, SE = .36, t(77) = 2.53, p = .013$) and purchases ($B = .66, SE = .25, t(116) = 3.49, p = .01$).

**Discussion**

This study confirms our hypothesis by directly showing that objects with high sentimental value at acquisition indeed tend to elicit more association-related thoughts than objects with little sentimental value. These association-related thoughts contribute to the formation of sentimental value and slow the process of hedonic adaptation. Moreover, it lends support to our hypothesis and demonstrates that sentimental value typically does not decrease over time, and that the more sentimentally valuable an object is, the less influence the decrease in feature-related utility has on happiness with the object. In other words, sentimental value buffers the detrimental effect of the reduction in feature-related utility on happiness: the same decrease in feature-related utility led to a smaller drop in happiness with high-sentimental value items than with low-sentimental value items.

**General Discussion**

Sentimental value is a highly prevalent phenomenon in individuals’ daily lives. This article defined, presented antecedents to, and demonstrated meaningful consequences (slowing hedonic adaptation) of this rich construct. We first show that sentimental value is a function of associations with significant others and/or associations with special events and that people have a shared understanding of this definition (Studies 1A and 1B). We next demonstrate, over periods of time as long as 9-months (Studies 2–6), that objects that are high in sentimental value lead to considerably slower rates of hedonic adaptation as compared with objects that are low in sentimental value. We show that this is the case because though feature-related utility decreases with time for all objects, sentimental value usually does not, and that the more an object is sentimentally valuable, the smaller is the impact of the decrease in feature-related utility on hedonic adaptation (Study 6). Moreover, we show that the strong associations with significant others and/or associations with special events lead to sentimental value that in turn slows adaptation (Studies 5 and 6). In all, we introduce a highly relevant construct to the psychology literature and document a strong and reliable effect across a number of stimuli, contexts, and methodologies.

**Theoretical Implications and Future Research**

The current research joins a growing body of literature identifying important factors that influence hedonic adaptation (Bar-Anan et al., 2009; Carter & Gilovich, 2010, 2012; Galak et al., 2013; Kurtz et al., 2007; Nelson & Meyvis, 2008; Nicolao et al., 2009; Redden, 2008; Temple et al., 2008; Van Boven & Gilovich, 2003; Wilson et al., 2005, 2000). However, whereas previous research on hedonic adaptation focused on how item features influence hedonic adaptation, the present research explores how a form of nonfeature related utility influences hedonic adaptation. Though, as aforementioned, sentimental value is a highly relevant and important construct, it is surely not the only form of nonfeature related utility that could influence hedonic adaptation. In fact, recent research seems to suggest that other types of nonfeature-related utility may also influence hedonic adaptation but through very different processes. For example, some ongoing research has found that value from social identity may slow hedonic adaptation as people satiate more slowly to identity-consistent versus neutral items when the focal identity has been activated because of cognitive dissonance (Chugani, Irwin, & Redden, 2015). One of our hopes for this article is to open the door to future researchers to identify other important forms of nonfeature-related utility and how they influence important constructs such as happiness.

The present work is also related to recent research regarding purchasing goods versus experiences (Carter & Gilovich, 2010, 2012; Nicolao et al., 2009; Rosenzweig & Gilovich, 2011). In a nationally representative survey, 57% of respondents indicated that they were happier with an experiential purchase than with a material purchase, whereas only 34% of respondents indicated the opposite (Van Boven & Gilovich, 2003), suggesting that, if trying to maximize happiness, people should spend more on experiences than on material possessions. Though we agree with this general finding, we wonder if this conclusion should be tempered with the notion that some items, those that are sentimentally valuable, may indeed yield long lasting happiness. To the extent that people have the ability to purchase items that have sentimental value they may indeed yield long lasting happiness. To the extent that people have the ability to purchase items that have sentimental value they may be just as well off as if they had spent that money on experiences. Indeed, recent research along this line suggests that purchasing a material item to commemorate (versus an experience to celebrate) an event may even lead to more vivid memories and stronger
positive affect associated with a special event or achievement over a long period of time (Goodman, Malkoc, & Stephenson, 2015).

The present research is also related to the debate about whether gift-giving is an efficient enterprise. In 2010, Americans spent $228.4 billion during major national holidays on gifts for their friends and loved ones. Gifts account for 47.2% of total holiday spending, and gift cards made up one fifth of gift sales (Beeck, 2010). However, it is unclear whether gift-giving is a utility maximizing endeavor. For instance, it is easy to imagine that a gift giver is less attuned to the preferences of the gift recipient than the recipient is to her own preferences. This deadweight loss in gift giving (Waldfogel, 1993) can result in an inefficient transfer of utility from the gift giver to the gift recipient. That is, a gift giver spending $100 on a gift that is suboptimal for the recipient would have been better off, in a financial sense, giving the recipient the $100 in cash and having the recipient purchase something for herself. This way, the recipient would best match the $100 with her own preferences. There is, however, some debate as to whether this initial item, there is no theoretical reason that sentimental value could not, in a sense, spill over from one object to another.

Limitations

Though the results of our experiments are consistent and robust, this work has several limitations that should be considered. First, two of our studies (Studies 2 and 6) asked participants to self-report objects. Though we control for the variations in these reported objects (e.g., category level dummy variables, cost, and length of ownership) in our analyses, there is still the possibility that reported items differed in some way that we could not observe. For this reason, we conducted Studies 3, 4, and 5 where we held the objects the same across conditions, imbibed them with sentimental value, and observed the effects over time. Given how consistent the relationship between sentimental value and hedonic adaptation is across all of our studies, we do not feel that this limitation is overwhelming.

Second, a plausible explanation for the results of our studies that involve gifts is social desirability bias: participants felt unwilling to state that their hedonic response to gifts decreased with time, even though it actually did. That is, participants may have felt awkward stating that a gift from a loved one was no longer bringing them pleasure because doing so would seem taboo. Though we agree that this is possible, this concern is limited because we also observe our effect for nongifts that are less susceptible to such social desirability bias (Studies 3, 5, and 6). A social desirability explanation for all of our results would not only need to explain how it is taboo to report decreases for sentimentally gifts, but also taboo to is indicate decreases for objects that were not gifts. Given this, we find a social desirability explanation of our results unlikely.

Third, in most of our studies, objects that have higher sentimental value also have higher initial ratings of happiness. Therefore, an alternative explanation of our effect is that objects that have higher initial happiness ratings are less likely to adapt to than those that have lower initial happiness ratings. To rule out this explanation, we included the initial happiness as a covariate in regressions whenever hedonic adaptation was involved and showed that our effect held consistent the relationship between sentimental value and hedonic adaptation is across all of our studies, we do not feel that this limitation is overwhelming.

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There are many prescriptions for how people should step off the metaphorical “hedonic treadmill” (Brickman & Campbell, 1971). We provide another, easily actionable way in which people can remain happy with the things that they have: invest in sentimental experiences that imbue objects with sentimental value. Because the benefit from
sentimental value seems to seldom fade, doing so may be a way to stave off the detrimental consequences of hedonic adaptation.

References


## Appendix A

### Item Categorization Details

<table>
<thead>
<tr>
<th>Original category</th>
<th>Original subcategory</th>
<th>Frequency</th>
<th>Percentage of items</th>
<th>Final category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book</td>
<td>—</td>
<td>19</td>
<td>4.7%</td>
<td>Books, movies, music, and video games</td>
</tr>
<tr>
<td>Books, movies, music, and video games</td>
<td>—</td>
<td>6</td>
<td>1.5%</td>
<td>Car or car accessories</td>
</tr>
<tr>
<td>Car or car accessories</td>
<td>Car</td>
<td>0</td>
<td>0%</td>
<td>Car or car accessories</td>
</tr>
<tr>
<td>Clothing and clothing accessories</td>
<td>Clothing accessories</td>
<td>24</td>
<td>5.9%</td>
<td>Clothing and clothing accessories</td>
</tr>
<tr>
<td></td>
<td>Footwear</td>
<td>20</td>
<td>4.9%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General clothing</td>
<td>90</td>
<td>22.1%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Handbag</td>
<td>4</td>
<td>1.0%</td>
<td></td>
</tr>
<tr>
<td>Electronics</td>
<td>Electronic accessories</td>
<td>31</td>
<td>7.6%</td>
<td>Electronics and electronic accessories</td>
</tr>
<tr>
<td></td>
<td>Electronics</td>
<td>19</td>
<td>4.7%</td>
<td>Books, movies, music, and video games</td>
</tr>
<tr>
<td></td>
<td>Video game</td>
<td>19</td>
<td>4.7%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Video game system</td>
<td>3</td>
<td>.7%</td>
<td></td>
</tr>
<tr>
<td>Game or toy</td>
<td>General game or toy</td>
<td>18</td>
<td>4.4%</td>
<td>Sporting equipment, musical instruments, and games (not video games)</td>
</tr>
<tr>
<td></td>
<td>Musical instrument</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Household item</td>
<td>General household item</td>
<td>81</td>
<td>19.9%</td>
<td>Household item</td>
</tr>
<tr>
<td></td>
<td>Toiletry</td>
<td>21</td>
<td>5.2%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tool</td>
<td>12</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>Jewelry</td>
<td>—</td>
<td>13</td>
<td>3.2%</td>
<td>Jewelry</td>
</tr>
<tr>
<td>Other</td>
<td>—</td>
<td>8</td>
<td>2.0%</td>
<td>Other</td>
</tr>
<tr>
<td>Sporting equipment, musical instruments</td>
<td>—</td>
<td>4</td>
<td>1.0%</td>
<td>Sporting equipment, musical instruments, and games (not video games)</td>
</tr>
<tr>
<td>instruments, and games (not video games)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stationery</td>
<td>—</td>
<td>10</td>
<td>2.5%</td>
<td>Household item</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>407</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

*“Books, movies, music, and video games” and “sporting equipment, musical instruments, and games (not video games)” were added by the third, non-Amazon mTurk coder, and were not shown to mTurk coders during the categorization task.*

(Appendices continue)
## Appendix B

### Categories of Items by Conditions in Studies 2 and 6

<table>
<thead>
<tr>
<th>Category</th>
<th>Study 2</th>
<th></th>
<th>Study 6</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Books, movies, music, and video games</td>
<td>Gifts</td>
<td>Purchases</td>
<td>High SV</td>
<td>Low SV</td>
</tr>
<tr>
<td>Count</td>
<td>33</td>
<td>14</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Percentage within condition</td>
<td>12.80%</td>
<td>9.40%</td>
<td>6.4%</td>
<td>9.3%</td>
</tr>
<tr>
<td>Car or car accessories</td>
<td>Gifts</td>
<td>Purchases</td>
<td>High SV</td>
<td>Low SV</td>
</tr>
<tr>
<td>Count</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Percentage within condition</td>
<td>1.20%</td>
<td>1.30%</td>
<td>2.7%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Clothing and clothing accessories</td>
<td>Gifts</td>
<td>Purchases</td>
<td>High SV</td>
<td>Low SV</td>
</tr>
<tr>
<td>Count</td>
<td>98</td>
<td>40</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Percentage within condition</td>
<td>38.00%</td>
<td>26.80%</td>
<td>7.3%</td>
<td>12.0%</td>
</tr>
<tr>
<td>Electronics and electronic accessories</td>
<td>Gifts</td>
<td>Purchases</td>
<td>High SV</td>
<td>Low SV</td>
</tr>
<tr>
<td>Count</td>
<td>23</td>
<td>27</td>
<td>21</td>
<td>51</td>
</tr>
<tr>
<td>Percentage within condition</td>
<td>8.90%</td>
<td>18.10%</td>
<td>19.1%</td>
<td>47.2%</td>
</tr>
<tr>
<td>Household item</td>
<td>Gifts</td>
<td>Purchases</td>
<td>High SV</td>
<td>Low SV</td>
</tr>
<tr>
<td>Count</td>
<td>76</td>
<td>48</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Percentage within condition</td>
<td>29.50%</td>
<td>32.20%</td>
<td>11.8%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Jewelry</td>
<td>Gifts</td>
<td>Purchases</td>
<td>High SV</td>
<td>Low SV</td>
</tr>
<tr>
<td>Count</td>
<td>9</td>
<td>4</td>
<td>39</td>
<td>1</td>
</tr>
<tr>
<td>Percentage within condition</td>
<td>3.50%</td>
<td>2.70%</td>
<td>35.5%</td>
<td>.9%</td>
</tr>
<tr>
<td>Other</td>
<td>Gifts</td>
<td>Purchases</td>
<td>High SV</td>
<td>Low SV</td>
</tr>
<tr>
<td>Count</td>
<td>6</td>
<td>2</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Percentage within condition</td>
<td>2.30%</td>
<td>1.30%</td>
<td>4.5%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Sporting equipment, musical instruments, and books (not video games)</td>
<td>Gifts Purchases</td>
<td>High SV Low SV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Percentage within condition</td>
<td>3.90%</td>
<td>8.10%</td>
<td>12.7%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Total</td>
<td>258</td>
<td>149</td>
<td>110</td>
<td>108</td>
</tr>
<tr>
<td>Percentage within condition</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

*Note.* The items of Study 2 are the items participants still possessed at the time of Part 2. SV = sentimental value.

## Appendix C

### Percentage of Change in Happiness in All Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Change in happiness</th>
<th>Decrease</th>
<th>No change</th>
<th>Increase</th>
<th>Pearson $\chi^2$</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 2</td>
<td>Gift</td>
<td>28.7%</td>
<td>48.8%</td>
<td>22.5%</td>
<td>10.37</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Purchase</td>
<td>44.3%</td>
<td>39.6%</td>
<td>16.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study 3</td>
<td>High-sentimental value</td>
<td>36.0%</td>
<td>33.0%</td>
<td>31.0%</td>
<td>5.85</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td>Low-sentimental value</td>
<td>53.0%</td>
<td>24.0%</td>
<td>23.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study 4</td>
<td>Gift from partner</td>
<td>27.5%</td>
<td>60.8%</td>
<td>11.8%</td>
<td>24.33</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Gift from experimenter</td>
<td>60.3%</td>
<td>29.3%</td>
<td>10.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study 5</td>
<td>High-sentimental value</td>
<td>40.0%</td>
<td>33.0%</td>
<td>27.0%</td>
<td>10.07</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Low-sentimental value</td>
<td>60.0%</td>
<td>16.0%</td>
<td>24.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study 6</td>
<td>High-sentimental value</td>
<td>25.5%</td>
<td>67.3%</td>
<td>7.3%</td>
<td>33.29</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Low-sentimental value</td>
<td>63.0%</td>
<td>29.6%</td>
<td>7.4%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Appendices continue)
Appendix D
Stimuli Used in Study 4

See the online article for the color version of this figure.

New Policy for the *Journal of Personality and Social Psychology*

The *Journal of Personality and Social Psychology* is inviting replication studies submissions. Although not a central part of its mission, the *Journal of Personality and Social Psychology* values replications and encourages submissions that attempt to replicate important findings previously published in social and personality psychology. Major criteria for publication of replication papers include the theoretical importance of the finding being replicated, the statistical power of the replication study or studies, the extent to which the methodology, procedure, and materials match those of the original study, and the number and power of previous replications of the same finding. Novelty of theoretical or empirical contribution is not a major criterion, although evidence of moderators of a finding would be a positive factor.

Preference will be given to submissions by researchers other than the authors of the original finding, that present direct rather than conceptual replications, and that include attempts to replicate more than one study of a multi-study original publication. However, papers that do not meet these criteria will be considered as well.

Submit through the Manuscript Submission Portal at (http://www.apa.org/pubs/journals/psp/) and please note that the submission is a replication article. Replication manuscripts will be peer-reviewed and if accepted will be published online only and will be listed in the Table of Contents in the print journal. As in the past, papers that make a substantial novel conceptual contribution and also incorporate replications of previous findings continue to be welcome as regular submissions.