Sentimental Value and Its Influence on Hedonic Adaptation

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AUTHORS’ NOTE

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**Contribution Statement**

Previous research on hedonic adaptation focused on how product features influence hedonic adaptation. The present work introduces the idea of sentimental value and demonstrates how this non-feature related utility influences hedonic adaptation. This paper shows that sentimental value slows, and in some cases even eliminates, hedonic adaptation. This effect is caused by the fact happiness is a weighted sum of feature related utility and sentimental value, and that the higher sentimental value a product has, the lesser is the influence of feature-related utility on happiness. Because feature-related utility decreases with time, but sentimental value usually does not, sentimental value buffers the decrease in feature related utility on happiness with time. The present research contributes to the literature on hedonic adaptation, sentimental value and consumer well-being.

**Abstract**

Across eight studies, we investigate the antecedents of sentimental value (Studies 1A and 1B) and demonstrate its effect on hedonic adaptation using both naturally occurring items (Studies 2A and 2B) and experimentally manipulated items (Study 3). We show that the number of associations with a significant other or with a special event or time that an item carries determines the level of sentimental value and the rate of hedonic adaption (Study 4). We test the underlying process by showing that whereas feature-related utility decreases for all products with time, sentimental value usually does not, and that sentimental value moderates the influence of the decrement in feature-related utility on hedonic adaptation (Study 5). Finally, an examination of a boundary condition suggests that our hypothesized effects disappear in cases where sentimental value decreases with time (Study 6). We conclude with a discussion of related phenomena and implications for both consumers and marketers.
The unfortunate reality of the consumer experience is that happiness with products is fleeting. Even though many experiences start off as enjoyable, with time, that enjoyment fades. This decrease in happiness, known as hedonic adaptation, occurs across a large variety of consumer products (Frederick and Loewenstein 1999), and has resulted in a metaphorical “hedonic treadmill” (Brickman and Campbell 1971) where consumers are forced to constantly spend money to upgrade their current experiences in order to maintain the same level of happiness.

An important question posed to consumer researchers is: how can we slow unwanted hedonic adaptation? Recent research has greatly advanced our understanding of hedonic adaptation by examining how product or experience features influence it (Bar-Anan et al. 2009; Carter and Gilovich 2012; Carter and Gilovich 2010; Galak et al. 2013; Kurtz et al. 2007; Nelson and Meyvis 2008; Nicolao et al. 2009; Temple et al. 2008; Van Boven and Gilovich 2003; Wang et al. 2009; Wilson et al. 2005). All of this work, however, makes the assumption that the sole inputs to hedonic adaptation are product features without considering the role that non-feature-related factors play. In the current research, we introduce a type of non-feature-related utility, sentimental value, explore its antecedents, and demonstrate its influence on hedonic adaptation. We propose that the happiness that consumers derive from a product is a weighted sum of at least two components: feature-related utility derived from product 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: 1) a bicycle purchased for the self and 2) 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 do not exhibit hedonic adaptation. In the case of the bicycle purchased for the self, with time, the owner will adapt to it, but in the case of the bicycle received as a gift from a loved one, the owner will likely continue enjoying it for far longer. We explain our reasoning behind these predictions below.

The rest of this paper is organized as follows. We first define sentimental value, review the relevant literature, and differentiate sentimental value from other related constructs. We then review literature on hedonic adaptation and submit two propositions about how and why sentimental value influences hedonic adaptation. Next, we report eight studies (including two longitudinal studies over a period of up to 9 months) that examine the drivers of sentimental value, demonstrate its impact on hedonic adaptation, and investigate the proposed mechanism behind this effect. Finally, we discuss the contributions and implications of this research.

THEORETICAL BACKGROUND

Sentimental Value

Defining Sentimental Value. In order to understand what sentimental value is and is not, it is helpful to first consider the utility consumers derive from a product. As illustrated in Figure 1,
we propose that the utility that consumers derive from owning a product is a function of two components. One component is feature-related utility, which is derived from product features (e.g., the appearance, functions, and specifications). For example, feature-related utility from a necklace is provided by its precious materials, pleasing design, and fine quality. The second component to total utility is non-feature-related utility, which is defined by the value derived from all other factors that are beyond product features. For example, in addition to product features, consumers may gain value if the product 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 non-feature related utility, the central focus of this research is sentimental value. Sentimental value stems from two places: 1) 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 and Chen 2002, 619) such as family members, romantic partners, and close friends; and 2) 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”, such as weddings, graduations, birth of a child, and personal achievements (Zauberman et al. 2009). 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.

Although sentimental value is a highly prevalent phenomenon in consumers’ daily life (Belk 1991; Belk 1988; Csikszentmihalyi and Rochberg-Halton 1981; List and Shogren 1998; Solnick and Hemenway 1996; Wallendorf and Arnould 1988), it has yet to be clearly defined and systematically studied in the psychology and marketing disciplines. The best scholarly definitions of sentimental value come from philosophy (Fletcher 2009a; Fletcher 2009b; Hatzimoysis 2003; Korsgaard 1983). Though these definitions vary, we build upon from Fletcher (2009b) and define sentimental value as the non-feature-related value, derived from the associations with significant others or from the associations with special events or time in one’s life. For example, a product 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).

Below we 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.,
with a brand) should not be confused with sentimental value. Second, our definition of sentimental value explains the necessary conditions, rather than sufficient conditions, for an object to have sentimental value. That is, although an object can acquire sentimental value due to the aforementioned associations, objects that carry such associations do not necessarily have sentimental value. For example, the fact that an item has sentimental value because it reminds one of her husband does not mean that any item that reminds her of her husband has sentimental value. As a result, sentimental value cannot be explained by the mere association of an item with a significant other or with a special event or time one considers positive. In our research, we assume and demonstrate that consumers have a shared understanding of what types of objects are sentimentally valuable and do not attempt to provide all necessary conditions for such sentimental value. 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 which 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. Slightly more recent research using in-home personal interviews found that 60% of Americans chose an object as their “favorite” because of personal memories associated with the object, as opposed to the functionality associated with the object (Wallendorf and Arnould 1988). That is, the majority of favorite objects are ones that evoke strong associations and not ones that are, say, monetarily valuable. 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 and Shogren 1998; Solnick and Hemenway 1996). In sum, 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 consumers have with their products, especially when those products are sentimentally valuable. For this, we turn more to the consumer culture theory literature. Though this literature seldom uses the term “sentimental value,” it is clear that sentimental value is an important component to the relationship that consumers have with their possessions (Arnould and Thompson 2005; Belk 1991; Bradford 2009; Curasi et al. 2004; Price et al. 2000; Wallendorf and Arnould 1988). In his seminal work, 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, 29) when interacted with. That is, when a consumer interacts with a memory-laden object, she is reminded of the affective experience that she had either with the significant other gave her the object, or
the event or time that the object commemorates. Within the realm of these sentimentally valuable possessions, Kleine et al. (1995) examined how the mode of gift receipt (interpersonal gifts vs. self-gifts) influences attachment type. Whereas interpersonal gifts symbolize the social ties with others and lead to the affiliation type of attachment, self-gifts (i.e., gifts bought for the self as rewards for accomplishments) lead to the autonomy type of attachment. Grayson and Shulman (2000) showed that some special possessions are more irreplaceable than others because they verify important moments of personal history. Finally, recent work related to heirlooms has explored older consumers’ disposition and distribution tendencies for cherished possessions (Price et al. 2000), and the mechanisms by which cherished possessions and intergenerational gifted assets become families’ inalienable wealth (Bradford 2009; Curasi et al. 2004).

Taken together, previous research related to sentimental value suggests that sentimental value is prevalent and plays a critical role in consumers’ life experience. However, sentimental value was never formally defined, its antecedents haven’t been systematically tested, and the causal relationship between sentimental value and other variables is largely unknown. The current research aims 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.

**Sentimental Value as a Unique Construct.** Sentimental value is related to, yet different from, a number of constructs in marketing and psychology. For instance, sentimental value is related to, but distinct from, nostalgia. Nostalgia refers to a “belief that things were better…then than now” (Davis 1979, 18), or “a preference toward objects…that were more common…when one was young” (Holbrook and Schindler 1991, 330). Nostalgia and sentimental value are different constructs for at least two reasons. First, sentimental value can exist without nostalgia.
For instance, the wearer of a wedding ring does not have to be nostalgic to appreciate the sentimental value of the ring. That is, the wearer receives value from the ring simply because it reminds him or her of a spouse. It is not necessary that the ring also cause the wearer to think that the past was better than the present. Second, because the sentimental value of an item is determined by fixed factors, such as its associations with a significant other or the extent to which it commemorates a special event, sentimental value is relatively stable (we discuss this in more detail below). Nostalgia, however, can be easily influenced by situational factors, such as negative mood and the discrete affective state of loneliness (Wildschut et al. 2006). That is, nostalgia waxes and wanes as circumstances change within a day, but sentimental value, short of a major life change, remains relatively constant.

In addition, sentimental value differs from identity signaling. Identity signaling theory states that consumers purchase and consume a product not only because it has certain features, but also because it reflects who the individual is (Belk 1988; Berger and Heath 2007; Berger and Heath 2008; Ferraro et al. 2011; Kleine III et al. 1993; Kleine et al. 1995; Levy 1999). Sports fans wear t-shirts with their favorite sports team’s logo not only because the shirts are aesthetically pleasing (a form of feature-related utility), but also because those shirts signal to themselves and to others that part of their identity is an affiliation with that team. Sentimental value is different from the value of identity signaling in that sentimental value can be derived regardless of whether the product is identity relevant or not. That is, sentimental value can exist in products ranging from the most identity relevant (e.g., music CDs) to the most identity irrelevant (e.g., bike light) (Berger and Heath 2007), as long as the products hold valuable associations to the consumer.
Sentimental value is also distinct from the notion of an extension of the self. Although sentimentally valuable possessions may become extensions of the self, an object that is an extension of the self does not necessarily possess sentimental value. In fact, many of the possessions that are very close to the center of the self (e.g., body parts, the roof of a house, furniture, clothing) may not have any sentimental value at all. Moreover, sentimental value and objects that are “extensions of the self” have different antecedents: whereas sentimental value is usually caused by associations with a significant other or by associations with a special event or time in one’s life, possessions that are extensions of the self are primarily appropriated or controlled as an object for personal use, created by the individual, or extremely well known to the individual (Belk 1988; Sartre 1956), none of which is critical to sentimental value.

Sentimental value is related to, and yet different from, product attachment – “the strength of the emotional bond a consumer experiences with a product” (Kleine and Baker 2004; Kleine et al. 1995; Mugge et al. 2010; Schifferstein and Zwartkruis-Pelgrim 2008). Specifically, sentimental value and product attachment differ in their scope: whereas sentimental value is a type of non-feature-related utility derived solely from associations with a significant other or associations with a special event or time, product attachment can be generated by many other factors, including both feature-related utility (e.g., product utility, appearance, product design) and non-feature related utility (i.e., identity, self-expression) (Mugge et al. 2010; Mugge et al. 2008; Richins 1994; Schifferstein and Zwartkruis-Pelgrim 2008). For example, product attachment is highest for products that have higher functional utility and are more aesthetically pleasing (Mugge et al 2010). In contrast, sentimental value is agnostic to these dimensions. A product can have no functional utility and be aesthetically ugly (e.g. a jagged rock picked up by a romantic partner during a first date), and yet still be highly sentimentally valuable as it holds
strong associations (e.g. reminder of that first date). Although sentimental value may lead to product attachment, the two are, in fact, distinct constructs. One can think of the relationship between sentimental value and product attachment as a relationship between antecedent and consequence. In addition, it is important to note that product attachment is the relationship between a consumer and a product measured at a certain time point. Therefore, it speaks little to the dynamics of such relationship or the dynamics of consumers’ happiness with the product, and should not be confused with hedonic adaptation.

Finally, sentimental value is distinct from other constructs that are not object-specific. For instance, brand attachment focuses on a consumer’s feelings towards a brand (Fournier 1998; Fournier and Yao 1997). Though a consumer may have sentimental value for an object that is part of a brand that they are attached to, the two constructs are distinct. Sentimental value is specific to the product and does not span the brand. That is, if a consumer has sentimental value for a pair of Nike running shoes because they were worn when the runner won her first race, it is those shoes that have special value and not all products made by Nike. The same can be said for product involvement, or the consumers’ general attitudes towards a class or category of products (Laurent and Kapferer 1985). Using the same example, a consumer may have sentimental value for the Nike running shoes, but that does not mean that all objects in the category of running shoes share that sentimental value. Sentimental value, as far as the extant literature is concerned, is object specific (Grayson and Shulman 2000; Hood and Bloom 2008; Kleine and Baker 2004) and so any conceptualization that assumes a positive association with a category of products is distinct from sentimental value.
Hedonic Adaptation

A central goal that consumers 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 and Loewenstein 1999; Helson 1964). For example, a consumer may feel very happy right after acquiring a new product, but not nearly as happy with it as time goes by. This adaptation is determined by multiple factors, including basic psychophysical habituation, diversion of attention, and rationalization (Frederick and Loewenstein 1999; Helson 1964; Wilson et al. 2005; Wilson et al. 2000). Moreover, hedonic adaptation is rather robust and prevalent. People adapt to change in income (Di Tella et al. 2010), academic careers (Gilbert et al. 1998), and even to extreme life-changing events like incarceration (Zamble 1992).

In the domain of consumer research, hedonic adaptation manifests in the fact that consumers’ happiness with most consumer products and experiences fades over time (Epstein et al. 2009; Nelson and Meyvis 2008; Nelson et al. 2009; Redden 2008; Wang et al. 2009). For example, in one study, participants were given a kaleidoscope and told to interact with it either for one or seven days (Wang et al. 2009, Study 1). Despite initially rather enjoying their interaction, after seven days, happiness with the product decreased quite significantly, suggesting that participants adapted to the kaleidoscope rather quickly. Similarly, participants in a different study listened to a well-liked song over the course of eight days (Kahneman and Snell 1992).
Despite initially enjoying the song, after eight days, their enjoyment decreased considerably, again suggesting that participants adapted rather quickly to a pleasurable experience.

An important question posed to consumer researchers is how can we slow unwanted hedonic adaptation? Recent research has greatly advanced our understanding of hedonic adaptation by examining how product or experience features influence hedonic adaptation. First, contrary to common belief, breaks in a pleasant experience (e.g., a massage or television program) disrupt adaptation and make the experience more pleasant (Galak et al. 2013; Nelson and Meyvis 2008). Second, increasing the variations or even the perceived variations of a stimulus reduces adaptation (Redden 2008; Temple et al. 2008). For example, consumers presented with a variety of foods experienced a slower decrease in responses to foods than those presented with the same favorite food (Temple et al. 2008). Third, uncertain features are more difficult to adapt to than certain features (Bar-Anan et al. 2009; Kurtz et al. 2007; Wilson et al. 2005). Finally, experiential goods are more resistant to adaptation than material goods (Carter and Gilovich 2012; Carter and Gilovich 2010; Nicolao et al. 2009; Van Boven and Gilovich 2003).

All of this work, however, makes the assumption that the sole inputs to hedonic adaptation are product features without considering the role that non-feature-related factors play. In the current research, we explore the influence of one type of non-feature-related utility on hedonic adaptation by examining the relationship between sentimental value and adaptation. The reasons that we study the influence of sentimental value, rather than the influence of non-feature-related utility more broadly on hedonic adaptation are twofold. First, different types of non-feature-related utility may have different influences on hedonic adaptation. Second, different types of non-feature-related utility may influence hedonic adaptation through different processes,
which makes it difficult to propose a unifying theory that covers all types of non-feature related utility. For example, price promotions have been shown to enhance immediate consumption enjoyment by elevating mood, but reduce delayed consumption enjoyment by reducing attention during consumption, suggesting that transaction utility may speed up hedonic adaptation, but through a very different process than the one we propose (Lee and Tsai 2014). For simplicity, we consider only two components from which consumers 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 non-feature related utility.

Sentimental Value Influences Hedonic Adaptation

Do people adapt to objects with high sentimental value in a manner similar to objects with low sentimental value? To understand the effect of sentimental value on hedonic adaptation, it is important to consider how feature-related utility and sentimental value simultaneously influence the happiness that a consumer derives from a product over time. This can be best understood by considering three cases. First, is the case where an object has predominantly sentimental value, but has little feature-related utility (e.g. the same jagged rack picked up on a first date). We propose, and will elaborate on and demonstrate empirically below, that, in most cases, sentimental value does not decrease with time. Thus, in this instance, happiness with the object does not decrease with time and remains relatively constant as the primary input to
happiness is sentimental value. Second, is the case where an object has low sentimental value, but high feature-related utility (e.g. an iPad purchased for the self). In this instance, happiness is derived mainly from feature-related utility. Over time, as has been well documented, feature-related utility decreases and so does the happiness with the object. Finally is the more interesting case where an object has high sentimental value and, at least at first, high feature-related utility (e.g. an iPad received from a caring romantic partner as a gift). We hypothesize, and will empirically demonstrate that happiness with this object is less likely to decrease than that in the second case, despite a decrease in feature-related utility. In other words, we hypothesize that the happiness with an object fades more slowly when the object has higher versus lower sentimental value.

We further propose that this effect occurs because of two reasons: 1) sentimental value typically does not decrease with time (the \textit{temporal effect}); and 2) sentimental value moderates or overrides the influence that feature-related utility has on happiness, such that, the higher the (lower) sentimental value an object has, the lower (greater) is the influence of feature-related utility on happiness (the \textit{moderating effect}). Below we elaborate on these two reasons.

\textit{The temporal effect of sentimental value}. Regarding the temporal dynamics of sentimental value, though no prior work has directly addressed the issue of how sentimental value evolves over time, some evidence suggests that sentimental value may not decline with time. For example, wedding rings hold the same or even more sentimental value for older couples than for newlyweds, and the sentimental value of family heirlooms does not fade over time or generations (Belk 1991; Belk 1988; Curasi et al. 2004; Wallendorf and Arnould 1988). Why, though, is sentimental value immune to the passage of time? The reasons are twofold. First, family, romantic relationships, and friendships are the most important and closest interpersonal
relationships an individual has in life (Andersen and Chen 2002; Berscheid et al. 1989). As compared to other insignificant interpersonal relationships, these relationships last much longer and are much more stable (Granovetter 1983). Therefore, we expect that the sentimental value of objects that evoke thoughts of these relationships will not fade easily. Similarly, prior work shows that although consumers’ preference can be easily constructed by environment cues (Lichtenstein and Slovic 2006), consumers’ evaluations of important events and time in their lives are quite stable (Dunning 2007). For example, events such as graduation from college and getting married are likely to be considered as events or moments that are worth commemorating throughout one’s life time. Accordingly, the sentimental value of objects that commemorate such events and time is less likely to decline with time. Second, people tend to remember meaningful personal events more positively than they actually were (Bartlett 1995; Greenwald 1980; Mitchell et al. 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 actually increase if memories and associations become more positive over time. A souvenir purchased during vacation may become more sentimentally valuable weeks later if the vacation is viewed more favorable and meaningful in retrospect. In summary, prior research suggests that sentimental value usually does not decline with time and that it may even increase over time. We empirically test this temporal effect in Studies 2B-6.

The moderating effect of sentimental value. Regarding the moderating role of sentimental value in determining the influence of feature-related utility on happiness with an object, this effect is inspired by previous work suggesting that people cherish objects with high sentimental
value regardless of whether they have low or high feature-related utility (Curasi et al. 2004; Sherman and Newman 1977; Wallendorf and 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 focused on the personal memories this object brought to mind (Wallendorf and Arnould 1988). Moreover, 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), suggesting 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). As a result, though a person will be much happier if she wins a raffle for a bracelet made from gold than from ribbons, she might be equally happy if the bracelet is instead a gift from the person she fell in love with. Moreover, sentimental value’s capability of overriding the influence of feature-related utility on happiness may be due to a shift in attention. When an object is highly sentimentally valuable, the owner focuses more on the associations it evokes and less on the object features themselves. Therefore, the object features play a much less role in influencing happiness with objects that have high sentimental value. We directly test this moderating effect in Study 5.

Taken together, the temporal effect and moderating effect together explain how happiness with an object changes over time. For objects that have low sentimental value, consumers’ happiness heavily depends on feature-related utility. Because feature-related utility decreases with time, happiness also decreases with time. For objects that have high sentimental value, consumers’ happiness heavily depends on sentimental value and less so on feature-related utility. Because, in most cases, sentimental value does not decrease with time, happiness is less likely to
decrease. Therefore, we predict that consumers adapt more slowly to objects that have high sentimental value than those that have low sentimental value.

Finally, it is possible that other non-feature related utility may also influence hedonic adaptation through this proposed mechanism. However, for these other forms of non-feature-related utility to be able to influence hedonic adaption in this way they must meet the following two conditions: 1) they must remain relatively constant over time and 2) the magnitude of such utility has to be able to moderate the effect of change in feature-related utility on happiness, such that the higher the level of such utility, the less responsive is happiness to the change in feature-related utility. We suspect that some forms of non-feature-related utility may meet the first condition, but are likely to fail the second. For instance, in the case of brand value, although consumers’ perceptions of a brand might be stable over time, high brand value is unlikely to cause consumers to be less sensitive to changes in feature-related utility. If consumers’ happiness is equally sensitive to changes in feature-related utility regardless of how much they like the brand, there would be no difference in the rate of hedonic adaptation (i.e., a slope effect), but rather an overall increase in happiness at all times (i.e. an intercept effect). For instance, a consumer might have a very strong brand association to the brand Nike resulting in preference for Nike shoes over competitors in general. However, that consumer is still likely to throw away a pair of running shoes once their soles are worn out. That is, the feature-related utility declined with time, but the positive brand association did not make the consumer dislike her shoes any less. On the other hand, if those shoes were, for instance, the shoes that she wore when she won her first race, she very well may keep and cherish them despite their near uselessness as running shoes.
Below, we report eight studies that test our hypotheses. Studies 1A and 1B explore the antecedents of sentimental value. Studies 2A and 2B examine the effect of sentimental value on hedonic adaptation using naturally occurring items. Study 3 experimentally manipulates sentimental value of an item in the laboratory and demonstrates its effect on hedonic adaptation over a 9-month period. Study 4 tests to what extent the amount of positive associations determine sentimental value of an object and how these associations influence the rate of hedonic adaptation. Study 5 further tests the proposed mechanism and demonstrates how sentimental value and feature-related utility simultaneously influence hedonic adaptation. Finally, Study 6 investigates a boundary condition of our effect and shows that when an object loses its sentimental value due to a life-changing event (divorce), hedonic adaptation follows.

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 a significant other or from associations with special events or time in one’s life. The purpose of Studies 1A and 1B is to validate this definition and explore the antecedents of sentimental value.

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 durable good they currently own that has lots of sentimental value to them and then 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. Specifically, for each item, they simply indicated if the description included any reference to any of the four aforementioned categories. 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 meaningfully change our results.

**Results.** We found a high inter-rater agreement for all four categories. The measured 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. As shown in Table 1 (top panel), 51.0% of the items commemorated a special event or time, 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 with other people. That is, 80.0% of the items participants listed were sentimentally valuable for reasons consistent with our proposed
definition. In addition, 41.0% of them 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 that is the case, then sentimentally valuable objects are no different than, say, monetarily valuable objects. To test this distinction, we borrowed one of the methodologies used by Kamptner (1989) in assessing the value of 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 to non-sentimentally valuable objects. We predict that associations with a significant other and/or associations with special events or time in one’s life should appear much more prominently for objects that are sentimentally valuable.

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

Procedure. To elicit objects that were equally important but differed in 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. For each object, they 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 (i.e., yes, no, unsure), and how they acquired the item (i.e., purchase, gift, inheritance, unsure, other).

Results. Table 1 (bottom panel) summarizes the information about objects 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.

Importantly, 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, correlational results revealed that objects with higher sentimental value were more likely to be associated with a special event or time \((r = .56, p < .001)\), or with a significant other \((r = .54, p < .001)\), more likely to be a gift \((r = .15, p < .01)\) or inheritance \((r").
Results of Studies 1A and 1B suggested that our definition of sentimental value largely fits consumers’ 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 in general.

**STUDIES 2A and 2B**

Having empirically validated the definition of sentimental value, Studies 2A and 2B aim to demonstrate that sentimental value reduces the rate of hedonic adaptation. Study 2A does this in the domain of gifts and Study 2B does this in the domain of commemorations.
Study 2A examines the effect of sentimental value on hedonic adaptation by comparing happiness with gifts versus purchases over time. 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 I. Two hundred and seventy-three Americans (97 Females; $M_{age} = 29.81, SD = 9.99$) completed the first part of the study on January 3rd, 2013. Participants were asked to recall either all durable non-food or non-cash (e.g. gift cards) gifts they received (gift condition) or all non-food or non-cash items they purchased for themselves (purchase condition) during the Christmas holiday period of 2012 (which 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 II. 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 following 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 eighteen participants (43 Females; $M_{\text{age}} = 32.88$, $SD = 12.10$) 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 II were no happier with the items during Part I as compared to those who did not complete Part II ($M_{\text{complete}} = 9.28$ vs. $M_{\text{incomplete}} = 9.06$, $t(268) = .44$, $p = .67$).

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 they felt about each item at that moment on the same scale used in Part I, how much sentimental value each item had to them at that moment ($1 = \text{None at all}$, $7 = \text{Very much}$), and the lowest amount of money they would accept to sell each item (willingness to accept, WTA).

*Product 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, consumers 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 Studies 4 and 5) 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 nature of the purchases made. Rather than perform this categorization task separately for each study, we aggregated all responses from this study and Studies 4 and 5, and completed the task of categorizing all items simultaneously.
Accordingly, we report the methodology for categorization task only once, but break out the category membership and analyses of each item for each study in Appendix B.

Across all of our studies, we observed 816 unique objects either purchased or received as gifts. In order 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 employing 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 product categories (some categories were nested within others; e.g. “Car” was nested within “Car or Car Accessories”; see the first two columns of Appendix C). 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 $0.03 per item categorized. Each item was categorized by two independent coders and any disagreements were resolved by a third, non-mTurk coder. Forty-two mTurk coders completed the task. Because a coder was free to categorize as few or as many items as they liked, the number of completed categorization tasks varied across individuals, with the average number of items per coder being 39 (Max = 220; Min = 1). Following the categorization task, the items were spot checked for accuracy and categories with few items (e.g., musical instruments) were rolled up into more general categories (e.g., Sporting Equipment, Musical Instruments, and Games (not Video Games)). Thirty-three (4.04%) of the items did not easily fall into any of the remaining categories (e.g., “1 ounce gold bar”) and were labeled as “Other”. We found agreement for 78.4% of the items and resolved the remaining disagreements as described above.
Results - Items. Appendix B shows the items that participants still possessed at the time of Part II. There was a significant difference between conditions ($\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 Studies 4 and 5 we statistically control for the variation in product types by including category level dummy variables in all of our analyses (see Table 2). 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.

Table 2 about here

Besides product 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 non-independent residuals, we cannot use OLS regression. Instead we use regression with robust standard errors using participants as the cluster variable to account for this non-independence. 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 standard errors. 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. $\text{Median}_{\text{purchase}} = 25.00$; $B = -.06$, $SE = .16$, $t(114) = -.40$, $p = .69$).

Although no difference in the natural log of cost was found in this study, it was significantly different across conditions in other studies and so, to be consistent in our analyses, we still include it as a covariate in our analyses of this study.

**Results - Possession.** Participants in the gift condition were more likely to still possess the items 45 days after Part I than those in the purchase condition (97.0% vs. 90.3%; $B = 1.47$, $SE = .55$, $Wald = 7.05$, $p = .008$) 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.

**Results - 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 standard errors, revealed a significant effect of source ($M_{\text{gift}} = 4.36$ vs. $M_{\text{purchase}} = 3.74$; $B = .66$, $SE = .26$, $t(114) = 2.58$, $p = .01$) such that gifts were more sentimentally valuable than purchases.

Appendix D 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 I happiness ratings from Part II 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 source (0 = purchase, 1 = gift), category level dummy variables and the natural log of cost, with clustered robust standard errors, revealed a significant effect of source \(M_{gift} = -0.11\) vs. \(M_{purchase} = -0.60; B = 0.51, SE = 0.21, t(114) = 2.39, p = 0.02\), indicating that participants adapted to gifts more slowly than to purchases. As can be seen in Figure 2, we found that happiness with purchases significantly decreased over time \(M_{Part I} = 9.29\) vs. \(M_{Part II} = 8.69; t(148) = 4.87, p < 0.001\), whereas happiness with gifts did not \(M_{Part I} = 9.40\) vs. \(M_{Part II} = 9.29; t(257) = 1.09, p = 0.28\), 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: Median\(_{gift}\) = $30 vs. Median\(_{purchase}\) = $25; \(B = 0.45, SE = 0.19, t(112) = 2.41, p = 0.02\), 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. This is true for all of our studies.

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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 standard errors while controlling for category level dummy variables and the natural log of cost. 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 \((B = .66, SE = .26, t(114) = 2.58, p = .01)\), and a significant total effect of source on change in happiness \((B = .51, SE = .21, t(114) = 2.39, p = .02)\). Importantly, when we added sentimental value to the model, the effect of source on change in happiness decreased \((B = .35, SE = .20, t(114) = 1.76, p = .08)\), whereas the effect of sentimental value on change in happiness remained significant \((B = -.24, SE = .04, t(114) = 5.79, p < .001)\). Finally, the bootstrap estimate (.16) for the overall model differed from zero at the 95% CI: [.06, .26], 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 \((B = .66, SE = .26, t(114) = 2.58, p = .01)\), and a significant total effect of source on WTA \((B = .45, SE = .19, t(112) = 2.41, p = .02)\). Importantly, when we added sentimental value to the model, the effect of source on WTA decreased \((B = .31, SE = .17, t(112) = 1.85, p = .07)\) whereas the effect of sentimental value on WTA remained significant \((B = .26, SE = .05, t(112) = 5.35, p < .001)\). Finally, the indirect effect (.17) for the overall model differed from zero at the 95% CI: [.07, .28], indicating that sentimental value mediated the effect of source on WTA of the items.

**Discussion.** The results of this study demonstrate the role that sentimental value plays in hedonic adaptation. Specifically, we observe that items consumers received as gifts tend to exhibit slower rates of hedonic adaptation as compared to similar items consumers 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. That is, participants may have felt awkward stating that a gift was no longer bringing them pleasure because doing so might seem taboo (Tetlock et al. 2000). To rule out this explanation, we conducted Study 2B where participants were not asked to recall gifts, but rather to recall different purchases they had made for themselves.

Second, though we tried our best to statistically control for product category, the observed effect on adaptation rate may still be due to differences in products and even product models. 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 Study 3 where we imbued some items with sentimental value and observed whether they showed slower rates of adaptation than items which we did not imbue with sentimental value.

Study 2B

Study 2B serves three purposes. First, it tests the generalizability of the findings of Study 2A by using a different operationalization of sentimental value – commemorations of a special event. Second, it helps address the issue of demand characteristic in Study 2A. Third, it employs a different method to control for the differences in product categories. Instead of independent coders sorting products into different categories and statistically controlling for these categories, we asked participants to list items of the same category.
**Participants.** One hundred and seventy-eight Americans (84 Females, 2 Unknown; $M_{age} = 32.82, SD = 10.61$) from Amazon mTurk online panel completed a survey in exchange for $0.30.

**Procedure.** Participants first thought of an item they currently own that was associated with a special event or time. Specifically, they were asked to list an item that commemorated some special or meaningful events or moments in their life (e.g., a souvenir they purchased during a vacation, or an item that reminds them of their first job) and that was purchased for them by themselves. Examples of items listed are “a coffee mug on 20th wedding anniversary in PA”, “a poster from the first concert me and my girlfriend went to together”, and “a lamp for my 40th birthday”. Next, participants thought of and described an item that was of the same product category as the previous item, purchased by themselves, but that did not commemorate any special or meaningful events or moments in their life. Examples of items listed are “a mug purchased at a yard sale”, “a Walking Dead poster that is cool to have”, “a lamp for the living room”. If they could not think of such an item, they were instructed to check a box so that they would not answer any questions about this item. In this way we were able to, within subjects, control for product category differences between items that commemorate special events and items that do not. Next, for each item they listed, participants indicated how happy they were with the item when they first acquired it and at that very moment on two separate scales ($1 = Not happy at all, 9 = Very happy$), the extent to which it commemorated something important in their life on ($1 = Not at all, 7 = Very much$), how much sentimental value the item had to them when they acquired it and at that very moment on two separate scales ($1 = None at all, 7 = Very much$), the cost of the item, and how long ago they acquired it.
Results. Thirty-eight participants could not think of two items that were similar to each other yet differed in their ability in commemoration and were thus excluded from the subsequent analyses.

Results - Items. A paired-samples t-test showed that the two items significantly differed in their ability in commemorating a special event ($M_{\text{commemoration}} = 6.23$ vs. $M_{\text{no-commemoration}} = 2.15$; $t(139) = 24.04, p < .001$), suggesting that participants understood the instructions. 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. Items that commemorated special events cost more (untransformed cost: $\text{Median}_{\text{commemoration}} = $25.00 vs. $\text{Median}_{\text{no-commemoration}} = $15.00; $t(138) = 4.80, p < .001$) and were in possession longer ($M_{\text{commemoration}} = 56.02$ vs. $M_{\text{no-commemoration}} = 39.72; t(138) = 2.62, p = .01$) than the other items. In the subsequent analyses we statistically control for the natural log of cost and the length of ownership.

Results - Sentimental Value. Participants reported that the item that commemorated a special event had more sentimental value than those that did not, both at the time they acquired the item ($M_{\text{commemoration}} = 5.28$ vs. $M_{\text{no-commemoration}} = 2.88$; $t(205) = 10.22, p < .001$), and at the time they participated in the study ($M_{\text{commemoration}} = 5.80$ vs. $M_{\text{no-commemoration}} = 2.64; t(205) = 15.44, p < .001$). Consistent with the temporal effect of sentimental value, sentimental value did not fade over time (for items that commemorated a special event, $M_{\text{initial}} = 5.69$ vs. $M_{\text{current}} = 5.89$; $t(139) = 1.57, p = .12$; for items that did not, $M_{\text{initial}} = 2.52$ vs. $M_{\text{current}} = 2.50; t(139) = .24, p = .81$).

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Insert Figure 3 about here

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**Results - Happiness.** A linear regression of change in happiness on the item recalled (0 = no-commemoration, 1 = commemoration), the natural log of cost and the length of ownership, with clustered subjects, revealed a significant effect of the item recalled ($M_{\text{commemoration}} = -0.57$ vs. $M_{\text{no-commemoration}} = -1.11$; $B = .66$, $SE = .19$, $t(139) = 3.52$, $p = .001$), indicating that participants adapted to the item that commemorated a special event more slowly than to the item that did not, though happiness decreased with time in both conditions (for items that commemorated a special event, $M_{\text{initial}} = 8.24$ vs. $M_{\text{current}} = 7.66$; $t(139) = 4.59$, $p < .001$; for items that did not, $M_{\text{initial}} = 6.51$ vs. $M_{\text{current}} = 5.40$; $t(139) = 7.62$, $p < .001$; Figure 3).

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Insert Figure 3 about here

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**Mediation Analysis.** We hypothesize that consumers adapt more slowly to the item that commemorated a special event because it had higher sentimental value. To test this hypothesis, we conducted a within-subjects mediation analysis (Judd et al. 2001). First, for each of the two items, we regressed change in happiness on the current level of sentimental value, time and the natural log of cost and found two significant effects of sentimental value (for the item that commemorated a special event: $B = .51$, $SE = .09$, $t(135) = 5.84$, $p < .001$; for the item that did not, $B = .29$, $SE = .08$, $t(136) = 3.64$, $p < .001$). Second, we computed the difference of change in happiness of the two items and regressed it on the difference of sentimental value of the two items, the sum of sentimental value of the two items while controlling for the effects of time and the natural log of cost. The coefficient of the difference of sentimental value was significant ($B$...
= .36, SE = .09, t(132) = 4.17, p < .001), indicating that sentimental value mediated the item recall task on the rate of hedonic adaptation.

Discussion. This study replicates the slowing effect of sentimental value on hedonic adaptation using a different operationalization – commemoration of a special event or moment in one’s life. Specifically, we found that consumers adapt to items that commemorate a special event more slowly than to items that do not, because the former have higher sentimental value. This study also ruled out demand as an alternative explanation, as both items participants recalled were purchases they made themselves and so any demand would have been observed in both cases.

This study attempted to hold product category constant by asking participants to recall items of the same category. However, this procedure cannot completely eliminate the possibility that the difference in adaptation rates may be caused by differences in products. To address this issue better, we conducted Study 3 where we held the items constant and experimentally manipulated sentimental value by associating the items with either one’s romantic partner or the experimenter.

STUDY 3

Study 3 sought to experimentally manipulate sentimental value of an item by manipulating the person with whom the item was associated. The study consisted of three parts implemented over a span of nine months. During the first part, participants received 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 three months and even nine months later. This approach allows us to control for the item in question while experimentally manipulating the degree of sentimental value the item has.

Method

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

*Part I.* 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 in order to ensure that their responses would not be influenced by one another. They were then instructed to complete a 33-item personality test which consisted of 30 filler questions from the Big Five Personality Inventory (John, Donahue, and Kentle 1991) and three additional questions which measured the strength of their romantic relationship. Specifically, they indicated to what extent they agree or disagree with the following statements (1 = *Extremely disagree*, 9 = *Extremely agree*): “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.”
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 E).

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 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 had the opposite. In 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 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 prior to 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 were 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 participant chose the gift for him- or herself, and the other participant 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 questions about sentimental value were asked during this part.
Part II. The second part of the study was conducted three months after the first part. The experimenter called each participant and scheduled a time and location for the follow-up survey. To ensure a high response rate, we allowed participants to pick any locations convenient to them as long as the location was quiet and private. Most participants completed this part in a classroom, the library, or their dormitory (all students live in on-campus housing offered by the university). All 114 participants completed Part II and did so individually (i.e., their romantic partner was not present). Participants indicated whether they still possessed the item, how happy they were with the item on the same scale as in Part I, sentimental value of the item (1 = None at all, 9 = Very much), and the lowest amount of money they would accept to sell the item (WTA). Finally, they again answered the three questions about the quality of their relationship asked in Part I.

Part III. The third part of the study was conducted via telephone six months after Part II. Participants were recruited with the promise of entry into a lottery for an iPod Shuffle. Of the 114 individuals who completed parts I and II, we were able to collect 51 (45%) responses for Part III. The response rate was low because many participants graduated a few months after Part II and changed their cellphone numbers after they found jobs in different cities in order 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 III, 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 which were part of a different research project.

Results of Part I and Part II
We first report the results of Parts I and II. 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. Importantly, these exclusions had no substantive effects on the interpretation of any of our results. Regardless, we chose to exclude the participants from the analyses to be as conservative as possible. 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 standard errors 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 standard errors. We observed a significant effect of source ($M_{\text{romantic partner}} = 8.31$ vs. $M_{\text{experimenter}} = 6.41$; $B = 1.90$, $SE = .29$, $t(54) = 6.62$, $p < .001$), indicating that gifts received from romantic partners had higher sentimental value than gifts received from the experimenter.
**Happiness.** A similar regression of change in happiness with clustered robust standard errors revealed a significant effect of source ($M_{\text{romantic partner}} = -.18$ vs. $M_{\text{experimenter}} = -1.45$; $B = 1.27, SE = .27, t(54) = 4.70, p < .001$), indicating that participants’ happiness with gifts from their partners faded more slowly than with gifts from the experimenter. As can be seen in Figure 4 (top panel), although the happiness with items from the experimenter significantly decreased over time ($M_{\text{Part I}} = 8.21$ vs. $M_{\text{Part II}} = 6.76$; $t(57) = 5.74, p < .001$), the happiness with gifts from their partners did not ($M_{\text{Part I}} = 8.73$ vs. $M_{\text{Part II}} = 8.55$; $t(50) = 1.22, p = .23$).

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Insert Figure 4 about here

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**WTA.** Despite not being a response option, many participants reported that they would not be willing to sell their item at any price. 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 to 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 standard errors. The results revealed a significant effect of source ($\text{Median}_{\text{romantic partner}} = 350$ yuan (~$40.32$) vs. $\text{Median}_{\text{experimenter}} = 20$ 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 I: $M_{\text{romantic partner}} = 7.10$ vs. $M_{\text{experimenter}} = 7.34$; $t(107) = .91, p = .37$; Part II: $M_{\text{romantic partner}} = 7.51$ 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, with clustered robust standard error (while controlling for the gift dummy variable) to test whether sentimental value mediates the effect of source on hedonic adaptation. First, we used change in happiness as a dependent variable. Although there is a direct effect of gift source on sentimental value ($B = 1.90, SE = .29, t(54) = 6.62, p < .001$), and a direct effect of sentimental value on change in happiness ($B = .22, SE = .09, t(47) = 2.34, p = .02$), sentimental value does not mediate the effect of gift source on change in happiness. As a secondary analysis, we conducted a similar mediation analysis using the natural log of WTA as dependent variable. Specifically, we found a direct effect of gift source on sentimental value ($B = 1.90, SE = .29, t(54) = 6.62, p < .001$), and a significant total effect of gift source on WTA ($B = 3.02, SE = .78, t(47) = 3.85, p < .001$). Importantly, when we added sentimental value to the model, the effect of gift source decreased ($B = 2.18, SE = .73, t(47) = 2.98, p = .005$), whereas the effect of sentimental value on WTA remained significant ($B = .45, SE = .12, t(49) = 3.71, p = .001$). Finally, the indirect effect (.85)
for the overall model differed from zero at the 95% CI: [.36, 1.05], indicating that sentimental value partially mediated the effect of gift source on WTA of the items.

Results of Part I, Part II and Part III

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 III (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 II (\( M_{\text{romantic partner}} = 8.31 \) vs. \( M_{\text{experimenter}} = 6.95; t(45) = 3.03, p = .004 \)), and Part III (\( M_{\text{romantic partner}} = 8.35 \) 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 the temporal effect of sentimental value, sentimental value did not decrease with time in either condition (i.e., when from the partner: \( M_{\text{Part II}} = 8.31 \) vs. \( M_{\text{Part III}} = 8.35; t(25) = .17, p = .87 \); when from the experimenter: \( M_{\text{Part II}} = 6.95 \) vs. \( M_{\text{Part III}} = 6.90; t(20) = .07, p = .94 \)).

Happiness. A regression of change in happiness 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 standard errors, revealed a significant effect of source
(M_{romantic\ partner} = -.50 \text{ vs. } M_{experimenter} = -1.62; B = .96, SE = .47, t(37) = 2.06, p = .047), 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 with the item significantly decreased over time in both conditions (when from the partner: M_{Part\ I} = 8.69 \text{ vs. } M_{Part\ III} = 8.19; t(25) = 2.69, p = .013; when from the experimenter: M_{Part\ I} = 8.67 \text{ vs. } M_{Part\ III} = 7.05; t(20) = 3.89, p = .001; see Figure 4, bottom panel).

Discussion

This study further demonstrates the mitigating role that sentimental value has on hedonic adaptation. Unlike Studies 2A and 2B, this study uses a paradigm where we imbue an item with sentimental value in the lab rather than ask participants to list items that tend to have high sentimental value (e.g., gifts or purchases that commemorate a special event). That said, the convergent results from Studies 2A, 2B, and 3 give us some confidence that a self-reported methodology like the one used in Studies 2A and 2B has validity. Moreover, consistent with our theorizing, sentimental value is invariant across a 6-month period (Part II to Part III), and the influence of sentimental value on hedonic adaptation spans 9 months.

STUDY 4
Studies 1A and 1B demonstrated that almost all objects that have high sentimental value carry associations with a significant other or with a special event or time in one’s life. Study 4 tests the extent to which these associations underlie sentimental value and its influence on hedonic adaptation.

Method

Participants. Two hundred and eight Americans (107 Females; \(M_{age} = 34.34, SD = 12.72\)) from the Amazon mTurk online panel completed a survey in exchange for $0.30.

Procedure. Participants were randomly assigned to recall a durable good that had either a lot of sentimental value or little sentimental value to them. Specifically, participants were asked to describe a durable product they currently possessed that had a lot of (little) sentimental value to them and was worth at least $100. In both conditions, the product they indicated could either be a purchase or a gift acquired since 2011. All participants then provided a brief description of the product, the cost of the product, how long ago they acquired the product, how important the product was to them (1 = Not at all important, 7 = Very important), and how much sentimental value the product had to them both when they acquired it and at that very moment on two separate scales (1 = Not at all, 7 = Very much).

Next, participants listed all the thoughts they typically have when they use, see, or think about the product. Specifically, they were told to type each of their thoughts in a textbox, one at a time, until they could not think of any more. Finally, participants indicated how happy they were with the item when they first acquired it and at that very moment on two separate scales (1 = Very unhappy, 11 = Very happy).
Results

One participant listed an item that he no longer possessed and was thus excluded from the subsequent analyses.

*Items.* As can be seen in Appendix B, there was a significant difference between conditions in what items participants recalled ($\chi^2 (7) = 29.59, p < .001$). There was no difference between conditions in the length of ownership ($M_{\text{high}} = 12.78$ months vs. $M_{\text{low}} = 12.53$ months; $t(204) = .33, p = .74$). 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. Participants in the *high-sentimental value* condition reported that the item cost more (untransformed cost: $\text{Median}_{\text{high}} = \$215.00$ vs. $\text{Median}_{\text{low}} = \$200.00$; $t(205) = 2.33, p = .02$), and was more important ($M_{\text{high}} = 6.02$ vs. $M_{\text{low}} = 4.49$; $t(205) = 8.42, p < .001$) than those in the *low-sentimental value* condition. In the subsequent analyses we statistically control for the category level dummy variables, length of ownership, the natural log of cost, and importance of the item.

*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 ($M_{\text{high}} = 5.28$ vs. $M_{\text{low}} = 2.88$; $t(205) = 10.22, p < .001$), and at the time they participated in the study ($M_{\text{high}} = 5.80$ vs. $M_{\text{low}} = 2.64$; $t(205) = 15.44, p < .001$). To examine the change in sentimental value, we subtracted the initial sentimental value ratings from the current sentimental value ratings. 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, the natural log of cost, and importance of the item, revealed a significant effect of the recall task ($M_{high} = .51$ vs. $M_{low} = -.23$; $B = .61$, $SE = .25$, $t(194) = 2.44$, $p = .02$), indicating that sentimental value changed differently over time depending on which items participants recalled. Unpacking this effect, we see that sentimental value for items that were high in sentimental value actually slightly increased with time ($M_{initial} = 5.28$ vs. $M_{current} = 5.80$; $t(108) = 3.89$, $p < .001$), while sentimental value for items low in sentimental value did not change with time ($M_{initial} = 2.88$ vs. $M_{current} = 2.64$; $t(97) = 1.47$, $p = .15$).

**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 importance of the item, revealed a significant effect of recall tasks ($M_{high} = .14$ vs. $M_{low} = -1.23$; $B = .94$, $SE = .34$, $t(194) = 2.76$, $p = .006$), indicating that participants adapted more slowly to highly sentimentally valuable items than to less sentimentally valuable items (see Table 2). As can be seen in Figure 5, happiness with low-sentimental items decreased over time ($M_{initial} = 9.18$ vs. $M_{current} = 7.95$; $t(97) = 5.93$, $p < .001$), whereas happiness with high-sentimental items remained constant ($M_{initial} = 9.90$ vs. $M_{current} = 10.04$; $t(108) = .78$, $p = .44$).

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**Thoughts.** Two research assistants blind to hypotheses and condition coded participants’ thoughts into two categories: thoughts related to product features (e.g., appearance, function,
specifications, price, and how they feel about the item itself), and thoughts related to associations evoked by the item (e.g., associations with a significant other, a special event or time, and how they feel about those associations). For example, for a necklace, thoughts like “I think that my husband was being romantic when he selected the item” and “The gift reminded me of why I love my husband” were coded as thoughts related to associations; whereas thoughts like “classy”, “tough”, “pricey”, and “durable” were coded as thoughts related to the item itself. A 2 (Recall: high-sentimental value item vs. low-sentimental value item) x 2 (Thoughts: related to product features vs. related to associations) repeated-measure ANCOVA (controlling for the category level dummy variables, length of ownership, the natural log of cost, and importance) revealed a significant recall x time interaction, $F(1, 190) = 24.58, p < .001$. Consistent with our hypothesis, participants in the high-sentimental value condition listed significantly more association related thoughts ($M_{high} = 1.76$ vs. $M_{low} = .40; t(205) = 6.47, p < .001$) and fewer product feature related thoughts ($M_{high} = 2.48$ vs. $M_{low} = 4.00; t(201) = 5.80, p < .001$) than those in the low-sentimental value condition. There was no difference between conditions in the total number of thoughts listed ($M_{high} = 4.28$ vs. $M_{low} = 4.40; t(201) = .51, p = .61$).

**Mediation Analysis.** We hypothesize that consumers adapt more slowly to high-sentimental goods than to low-sentimental goods because they focus on associations other than the products features. To test this prediction, we conducted a two-stage mediation analysis while controlling for the category level dummy variables, length of ownership, the natural log of cost, and importance (see Figure 6). Following the procedures in previous studies, we use the current sentimental value rather than the past sentimental value as the mediator. When we use past sentimental value as a mediator our conclusions do not meaningfully differ. Following Model 6 outlined by Hayes (2013), we found a direct effect of recall task (high-sentimental good vs. low-
sentimental good) on the number of association related thoughts generated \((B = .87, t(194) = 3.81, p < .001)\), and a direct effect of the number of association related thoughts generated on sentimental value \((B = .16, t(193) = 2.13, p = .035)\), and a direct effect of recall task on sentimental value was significant \((B = 2.26, t(193) = 9.36, p < .001)\). More importantly, though the total effect of recall task on change in happiness was significant \((B = .94, t(194) = 2.76, p = .006)\), this effect dropped below the conventional level of significance \((B = .06, t(192) = .14, p = .89)\) when the number of association related thoughts \((B = .33, t(192) = 3.22, p = .002)\) and sentimental value \((B = .25, t(192) = 2.46, p = .01)\) were added to the model. Finally, the bootstrap estimates for all three indirect paths differ from zero. Specifically, the first indirect effect flows from recall task to association related thoughts and then to change in happiness, and has a value of .29, with a 95% bootstrap confidence interval of .42 to 1.52. The second indirect effect passes through both association related thoughts and sentimental value, and has a value of .03, with a 95% bootstrap confidence interval of .01 to .09. The last indirect effect carries the effect of recall task on change in happiness through sentimental value only, and has a value of .56, with a 95% bootstrap confidence interval of .13 to 1.21.

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Insert Figure 6 about here

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Discussion

This study confirms our hypothesis by directly showing that objects with high sentimental value 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.
STUDY 5

As aforementioned, we propose that happiness with a product is a weighted sum of feature-related utility and sentimental value. The purpose of Study 5 is to test how these two factors simultaneously influence happiness with a product over time. Specifically, we predict that the magnitude of sentimental value moderates the influence of feature-related utility on happiness with a product. That is, even though feature-related utility decreases over time for all products, such a decrease will have a smaller influence on happiness for products that have high sentimental value than for products that have low sentimental value. Said otherwise, sentimental value acts as a buffer against the negative influence of the decrease in feature-related utility on happiness with products.

Method

Participants. Two hundred and two Americans (80 Females; $M_{\text{age}} = 34.50, SD = 12.64$) from the Amazon mTurk online panel completed a survey in exchange for $0.50.

Procedure. The procedure of this study was identical to that of Study 4 except for the following differences. First, the product recalled by participants could have been acquired at any time. Second, the product was specified to be worth at least $50. Third, we did not ask participants to list their thoughts about the product. Finally, besides sentimental value and happiness with the product, following these measures, participants also indicated how much product feature-related utility the product had to them both when they acquired the product, and
at that very moment. Specifically, to ensure that participants understood the questions, we provided them with a definition of product feature-related utility (“Product 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 product feature-related value (as opposed to sentimental value) did this item have to you?” and “Right now, how much product 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 also indicated how they acquired the product (1 = I bought it, 2 = I received it from others, 3 = Other).

Results

Products Recalled. There was a significant difference between conditions in what items participants recalled ($\chi^2 (7) = 19.90, p = .006$, see Appendix B, as well as a significant difference between conditions in the length of ownership ($M_{high} = 45.67$ months vs. $M_{low} = 21.97$ months; $t(200) = 3.74, p < .001$). 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. Participants in the high-sentimental value condition reported that the item cost marginally more (untransformed cost: $Median_{high} = $4197.20 vs. $Median_{low} = $431.01; $t(199) = 1.72, p = .09$) than those in the low-sentimental value condition. In the subsequent analyses we controlled 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 participants reported in the low-sentimental value condition, both at the time they acquired the item ($M_{high} = 4.69$ vs. $M_{low} = 2.62; t(200) = 7.33, p$
< .001), and at the time they participated in the study ($M_{\text{high}} = 6.28$ vs. $M_{\text{low}} = 2.38$; $t(200) = 19.31, p < .001$). A linear regression of change in sentimental value on recall tasks ($0 = \text{low-sentimental value item}, 1 = \text{high-sentimental value item}$), the category level dummy variables, length of ownership and the natural log of cost, revealed a significant effect of recall tasks ($M_{\text{high}} = 1.58$ vs. $M_{\text{low}} = -.24$; $B = 1.67, SE = .26, t(190) = 6.51, p < .001$), indicating that sentimental value changed differently over time depending on which items participants recalled. Specifically, sentimental value for products that were highly sentimentally valuable actually increased with time ($M_{\text{initial}} = 4.69$ vs. $M_{\text{current}} = 6.28$; $t(97) = 8.25, p < .001$). Somewhat surprisingly, sentimental value towards objects in the low-sentimental value condition decreased with time, though this decrease was minimal ($M_{\text{initial}} = 2.62$ vs. $M_{\text{current}} = 2.38$; $t(103) = 4.51, p < .001$).

**Happiness.** A linear regression of change in happiness on the recall task ($0 = \text{low-sentimental value item}, 1 = \text{high-sentimental value item}$), the category level dummy variables, length of ownership, and the natural log of cost, revealed a significant effect of recall task ($M_{\text{high}} = -.44$ vs. $M_{\text{low}} = 1.04$; $B = -1.52, SE = .30, t(190) = 5.03, p < .001$), indicating that happiness changed differently over time depending on which items participants recalled. As can be seen in Figure 7 (top panel), happiness with the low-sentimental item decreased over time ($M_{\text{initial}} = 8.82$ vs. $M_{\text{current}} = 7.78$; $t(103) = 4.51, p < .001$), whereas happiness with the high-sentimental item actually slightly increased over time ($M_{\text{initial}} = 9.76$ vs. $M_{\text{current}} = 10.19$; $t(97) = 2.78, p = .006$).

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Insert Figure 7 about here
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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 ($M_{high} = -0.50$ vs. $M_{low} = -0.68$; $B = 0.34$, $SE = 0.22$, $t(190) = 1.53$, $p = 0.13$), indicating that feature related utility did not change differently across conditions. As can be seen in Figure 7 (bottom panel), feature related utility significantly decreased over time for both the high-sentimental items ($M_{initial} = 5.29$ vs. $M_{current} = 4.79$; $t(97) = 3.30$, $p = 0.001$) and the low-sentimental items ($M_{initial} = 5.63$ vs. $M_{current} = 4.94$; $t(103) = 4.52$, $p < 0.001$).

Mediation and Moderation Analysis. We made three primary predictions for the effects of sentimental value and feature-related utility on hedonic adaptation. First, in general, the more sentimental value an item has, the less a participant will adapt to it. Second, in general, the greater the decrease in feature-related utility over time, the more a person will hedonically adapt to it. Third, the magnitude of sentimental value moderates the influence of feature-related utility on 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 8, and simultaneously test these predictions with a series of multiple regressions. Importantly, 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 et al. 2013). Also, as mentioned earlier, we controlled for the category level dummy variables, length of ownership, and the natural log of cost in all our analyses.

Results showed that all three predictions were supported. First, following Model 4 outlined by Hayes (2013), we found a direct effect of the recall task manipulation (high
sentimental value vs. low sentimental value) on sentimental value \((B = 3.62, t(190) = 17.35, p < .001)\), and a significant total effect of the recall task on change in happiness \((B = 1.25, t(188) = 4.58, p < .001)\). Importantly, when we added sentimental value to the model, the effect of the recall task on change in happiness was not significant \((B = .25, t(187) = .58, p = .57)\), whereas the effect of sentimental value on change in happiness remained significant \((B = .28, t(187) = 3.04, p = .003)\). Finally, the bootstrap estimate (1.01) for the overall model differed from zero at the 95% CI: [.42, 1.66], indicating that sentimental value fully mediated the effect of the recall task on change in happiness. Second, we found that the greater the decrease in feature-related utility of an item, the more participants adapted to it \((B = .41, t(187) = 4.77, p < .001)\). Finally, the effect of change in feature-related utility on hedonic adaptation was moderated by the level of sentimental value \((B = -.19, t(187) = 5.44, p < .001)\). That is, when sentimental value is low, change in feature-related utility is highly associated with hedonic adaptation, but when sentimental value is high, the influence of feature-related utility on hedonic adaptation is mitigated. We can also examine 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 \((r = .51, p < .001)\), the larger the decrease in feature-related utility, the larger the decrease in happiness), but no correlation in the high sentimental-value condition \((r = .01, p = .95)\). The difference in correlations was significant \((z = 3.87, p < .001)\).

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Insert Figure 8 about here

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Sources of Acquisition. Studies 2A and 2B demonstrated that the influence of sentimental value on hedonic adaptation is robust to at least two sources of sentimental value: gifts (which evoke associations with significant others) and commemorations (which evoke associations with special events or times in one’s life). 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 products in this study. Specifically, the percentages of purchases, gifts and other sources was 53.8%, 45.1%, and 1.1%, respectively, in the high-sentimental value condition, and 69.4%, 30.6% and 0%, respectively, in the low-sentimental value condition. Though there was a slight difference in the proportion of acquisition types across conditions ($\chi^2(2) = 5.54, p = .06$), we did not find a difference in the influence of sentimental value on hedonic adaptation across gifts and purchases ($B = -.29, SE = .63, t(174) = .45, p = .65$). That is, the influence of sentimental value on adaptation remains statistically significant for both gifts ($B = 1.35, SE = .56, t(59) = 2.43, p = .018$) and purchases ($B = 1.50, SE = .43, t(106) = 3.49, p = .001$).

Discussion

The results of Study 5 lend support to our hypothesis and demonstrate 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 low-sentimental value items.
Study 6

Study 6 provides a boundary condition for the demonstrated effect. Though we have observed that sentimental value remains relatively constant (and sometimes even slightly increases) over time, this may not always be the case. Indeed, to the extent that sentimental value is a function of the associations that underlie it, sentimental value may decrease whenever the underlying associations become less important or outright negative. This study tests this prediction by examining the change in sentimental value of wedding rings across married and divorced individuals. A wedding ring holds sentimental value because of the positive associations it evokes with a loved spouse. If that spouse is no longer loved, we would expect the sentimental value of that ring to decrease. Accordingly, if sentimental value decreases, we would not expect to observe the buffering effect on hedonic adaptation.

Method

Prescreen and Participants. Participants were recruited to complete a short study on the Amazon mTurk online panel. They were informed that before they received access to the study they must first compete a prescreen questionnaire, and that if they failed to meet the prescreen conditions they were not allowed to proceed. They were not informed what conditions would allow them entry to the study. The prescreen included two relevant qualification questions “what is your marital status” and “do you have a wedding ring,” and six filler questions. Participants
were allowed to participate in this study only if they were either married or divorced (our primary independent variable) and they still possessed a wedding ring. Participants who did not meet these two conditions were informed that they were ineligible for the study and did not proceed any further. Ninety-one Americans (48 Females; $M_{age} = 38.84, SD = 12.10$) from the Amazon mTurk online panel were eligible to participate and were paid $0.50 for their participation.

*Procedure.* Following the prescreen questionnaire, eligible participants indicated how happy they were with their wedding ring when they first acquired it and right now on separate scales ($1 = \text{Very unhappy}, 11 = \text{Very happy}$), what the ring brings to mind when they see, use or think about it (an open-ended question), how much sentimental value the ring had to them both when they acquired it and right now on two separate scales ($1 = \text{None at all}, 7 = \text{Very much}$), how much they loved/respected/trusted their (ex)spouse at the time they got married and right now on six separate scales ($1 = \text{Not at all}, 7 = \text{Very much}$), the cost of the ring, and how long ago they acquired the ring.

One potential problem with this study is the lack of random assignment to conditions. Married and divorced individuals may differ in many respects other than the single dimension of marital status. It is possible that divorced individuals may be, in general, more likely to depreciate sentimental value of any items, not just their wedding ring. If so, observing that sentimental value of a wedding ring changed differently over time across married and divorced individuals may be a result of a trait difference and not a change in the nature of the associations that their ring brings to mind. Accordingly, to test this possibility, all participants next answered an additional set of questions about a highly sentimentally valuable item that had nothing to do with their marriage. If both married and divorced individuals respond similarly to a non-marriage
related item in terms of their sentimental value towards it, but differently to their wedding ring, an item highly related to their marriage, we can assume that the differences we observe towards the wedding ring are not due to some trait level characteristic, but rather due to changes in the underlying associations. Specifically, participants recalled a durable item that had a lot of sentimental value to them and was worth at least $50. Critically, they were told that this item must have nothing to do with their marriage in any way (e.g., not something they received from their (ex)spouse or that reminds them of them (ex)spouse). All participants then provided a brief description of the item, indicated their happiness with the item both when they acquired it and right now on separate scales (1 = Very unhappy, 11 = Very happy), how much sentimental value the item had to them both when they acquired it and right now on two separate scales (1 = None at all, 7 = Very much), the cost of the item, and how long ago they acquired it.

Results

Ring. In all cases, the ring brought to mind things that were related to the current or previous marriage (e.g., (ex)spouse, wedding day, family). The cost of the ring was measured by a categorical variable that had eight levels (e.g., less than $1,000, $1,000 to $1,999). A chi-square test showed that the cost of the ring did not differ across the married and divorced conditions ($\chi^2(7) = 5.99, p = .54$). Participants in the divorced condition had owned the ring for a longer period than those in the married condition ($M_{\text{married}} = 9.67$ years vs. $M_{\text{divorced}} = 16.45$ years; $t(89) = 3.06, p = .003$). In the subsequent analyses we statistically control for cost and length of ownership.
Sentimental Value. At the time when participants acquired the ring, there was no difference in sentimental value of the ring ($M_{\text{married}} = 5.97$ vs. $M_{\text{divorced}} = 5.55$; $t(89) = 1.39, p = .17$). However, this changed considerably over time. A linear regression of change in sentimental value on marital status ($0 = \text{divorced}, 1 = \text{married}$), the cost dummy variables and length of ownership revealed a significant effect of marital status ($M_{\text{married}} = .50$ vs. $M_{\text{divorced}} = -2.24$; $B = 2.70, SE = .43, t(81) = 6.33, p < .001$), indicating that the sentimental value of the ring changed differently over time depending on participants’ marital status. Specifically, sentimental value of the ring for married individuals significantly increased with time ($M_{\text{initial}} = 5.97$ vs. $M_{\text{current}} = 6.47$; $t(57) = 3.09, p = .003$), while sentimental value for divorced individuals significantly decreased with time ($M_{\text{initial}} = 5.55$ vs. $M_{\text{current}} = 3.30$; $t(32) = 5.49, p < .001$; see Figure 9 top panel). This finding is consistent with our prediction that sentimental value depends on the underlying associations that an object evokes, and that when those associations change, so does sentimental value.

Happiness. A linear regression of change in happiness on marital status ($0 = \text{divorced}, 1 = \text{married}$), cost dummy variables and length of ownership revealed a significant effect of marital status ($M_{\text{married}} = -.72$ vs. $M_{\text{divorced}} = -4.30$; $B = -3.75, SE = .63, t(81) = 5.99, p < .001$), indicating that married participants adapted more slowly to the ring than divorced participants. Though happiness with the ring decreased over time for both married participants ($M_{\text{initial}} = 10.29$ vs. $M_{\text{current}} = 9.57$; $t(57) = 3.28, p = .002$) and divorced participants ($M_{\text{initial}} = 9.03$ vs. $M_{\text{current}} = 4.73$;
\( t(32) = 6.57, p < .001; \) see Figure 9 bottom panel), this difference was moderated by marital status.

**Affection.** To examine participants’ relationship with their (ex)spouse, we created two measures of affection by averaging responses to the three affection-related questions (i.e., how much they loved/respected/trusted their (ex)spouse), one for the time they got married (\( \alpha = .78 \)), and one for the time they participated in the study (\( \alpha = .95 \)). We then calculated the change in affection by subtracting the initial affection ratings from the current affection ratings. A linear regression of change in affection on marital status (0 = divorced, 1 = married), cost dummy variables and length of ownership revealed a significant effect of marital status (\( M_{\text{married}} = -.07 \) vs. \( M_{\text{divorced}} = -3.31; B = 9.12, SE = .96, t(81) = 9.47, p < .001 \)), indicating that participants’ affection in their relationship changed differently as a function of marital status. Whereas the affection rating remained the same over for married participants (\( M_{\text{initial}} = 6.68 \) vs. \( M_{\text{current}} = 6.61; t(57) = .59, p = .56 \)), it significantly decreased for divorced participants (\( M_{\text{initial}} = 6.03 \) vs. \( M_{\text{current}} = 2.72; t(32) = 9.73, p < .001 \)).

**Mediation Analysis.** We hypothesized that the change in sentimental value of the ring was driven by the change in one’s relationship between his or her (ex)spouse. To test this hypothesis, we performed a mediation analysis using the change in sentimental value as the dependent variable and the change in affection as the mediator. Following Model 4 outlined by Hayes (2013), we found a direct effect of marital status on the change in affection (\( B = 3.04, SE = .32, t(81) = 9.47, p < .001 \)), and a significant total effect of marital status on the change in sentimental value (\( B = 2.70, SE = .43, t(81) = 6.33, p < .001 \)). Importantly, when we added the change in affection to the model, the effect of marital status on the change in sentimental value decreased (\( B = 1.24, SE = .58, t(80) = 2.13, p = .04 \)), whereas the effect of change in affection remained
significant \( B = .48, SE = .13, t(80) = 3.47, p < .001 \). Finally, the bootstrap estimate (1.46) for the overall model differed from zero at the 95\% CI: [.26, 2.63], indicating that the change in affection partially mediated the effect of marital status on the change in sentimental value of the ring. Moreover, a regression of change in happiness on current sentimental value, cost dummy variables and length of ownership revealed a significant effect of marital status \( B = .71, SE = .15, t(81) = 4.78, p < .001 \), indicating that the current sentimental value influenced change in happiness.

*Non-marriage Related Item.* To rule out the possibility that the above results were driven by a trait difference and not a change in the underlying association, we examined whether marital status influenced the change in sentimental value of the non-marriage related item. A regression of change in sentimental value on marital status, length of ownership and the natural log of cost revealed no effect of marital status \( M_{\text{married}} = 1.40 \text{ vs. } M_{\text{divorced}} = 1.67; B_{\text{sentimental value}} = -.15, SE = .41, t(80) = .35, p = .72 \), ruling out the trait explanation.

Discussion

Whereas we have repeatedly found in previous studies that sentimental value does not decrease with time, this is not always the case. The present study demonstrates a boundary condition of our effect by showing that when the underlying associations that drive sentimental value change, sentimental value changes with them and no longer slows hedonic adaptation.

**GENERAL DISCUSSION**
Sentimental value is a highly prevalent phenomenon in consumers’ daily lives. This paper 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 consumers have a shared understanding of this definition (Studies 1A and 1B). We next demonstrate that objects that are high in sentimental value lead to considerably slower rates of hedonic adaptation as compared to objects that are low in sentimental value (Studies 2-6) over periods of time as long as 9-months (Study 3). We show that this is the case because strong associations with significant others and/or associations with special events lead to sentimental value which in turn slows adaptation (Study 4). Moreover, we show that, though feature-related utility decreases with time for all objects, the more an object is sentimentally valuable, the smaller is the impact of such decrease on hedonic adaptation (Study 5). Finally, we present a boundary condition of our effect: whereas, in most cases, sentimental value does not decrease with time, when the underlying associations that drive sentimental value decay, its buffering effects against adaptation diminish (Study 6). In all, we introduce a highly relevant and yet highly under-researched construct to the marketing literature and document a strong and reliable effect across a number of stimuli.

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 and Gilovich 2012; Carter and Gilovich 2010; Galak et al. 2013; Kurtz et al. 2007; Nelson and Meyvis 2008; Nicolao et al. 2009; Redden 2008; Temple et al. 2008; Van Boven and Gilovich 2003; Wilson et al. 2005). However, whereas previous research on hedonic adaptation focused on how product features influence hedonic adaptation, the present research explores how a form of non-feature 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 non-feature related utility that could influence hedonic adaptation. In fact, recent research seems to suggest that other types of non-feature-related utility may also influence hedonic adaptation but through very different processes. For example, value from social identity may slow hedonic adaptation as consumers satiate more slowly to identity-consistent versus neutral products when the focal identity has been activated due to cognitive dissonance (Chugani et al. 2014). For example, students may enjoy a t-shirt with the logo of their university because it reminds them of events and friends at school, and/or because it reflects who they are. The former would be closer to sentimental value, while the latter would be closer to identity signaling. Though identity signaling is clearly a form of non-feature related utility, the mechanism by which it influences hedonic adaptation is quite different from how sentimental value influences hedonic adaptation. One of our hopes for this paper is to open the door to future researchers to identify other important forms of non-feature related utility and how they influence important consumer related constructs such as happiness.

The present work is also related to recent research regarding purchasing goods versus experiences (Carter and Gilovich 2012; Carter and Gilovich 2010; Nicolao et al. 2009; Rosenzweig and Gilovich 2011; Van Boven and Gilovich 2003). In a nationally representative
survey, 57% of respondents indicated that they were happier with an experiential purchase than with a material purchase, while only 34% of respondents indicated the opposite (Van Boven and Gilovich 2003), suggesting that, if trying to maximize happiness, consumers 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 products, those which are sentimentally valuable, may indeed yield long lasting happiness. To the extent that consumers 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 (Dalton et al. 2014).

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. In this way, the recipient would best match the $100 with her preferences. There is, however, some debate as to whether this deadweight loss exists (List and Shogren 1998; Solnick and Hemenway 1996). Regardless, our
research is agnostic as to whether the immediate effect of gift giving is efficient. Rather, our work sheds light on the long term effect of gift giving. That is, even if gifts result in lower initial utility (something we do not observe in our data), in the long run, our results suggest that gifts, because of their sentimental value, will result in higher utility (happiness, in our research) than mere cash exchanges. Accordingly, even if gifts result in a deadweight loss, that loss is likely short lived.

Though we provide a definition useful for studying sentimental value, there are many unanswered questions that are left to future research. First, as mentioned earlier, an object can acquire sentimental value due to its associations with a significant other or/and with a special event or time in one’s life, yet not all items associated with the same person or event exhibit the same levels of sentimental value. For instance, a heart shaped pendant given by a husband to his wife clearly has sentimental value. However, a printer given by the same husband to the same wife likely does not. Though the giver and recipient were both the same, the object, for some reason, varies with regard to how much sentimental value it possesses. What are the factors that explain such differences? Though only preliminary, we have some evidence suggesting that product type may be one predictor of sentimental value. In a separate study ($N = 112$), among other things, we asked participants to imagine that they received one of four products as gifts during the holiday season (a Kindle, a mug, a backpack, and a watch) and indicate the sentimental value that each product would have to them ($1 = \text{Not at all}$, $7 = \text{Very much}$). Interestingly, there were significant differences in sentimental value across products, ranging from 3.46 (backpack) to 5.07 (watch), indicating that product type may be one predictors, among many others, of sentimental value. Related to this, in our Study 1B we found a significant negative correlation between the amount of sentimental value and functional value that important
objects possess. Though, again, merely speculative, perhaps the more an object is functional in nature the less likely it is to be sentimentally valuable. Whereas the necklace from the example above has limited functional value and is likely highly sentimentally valuable, the printer is highly functional and thus may be less likely to be sentimentally valuable.

Second, the downstream consequences of sentimental value are largely unknown. For example, how does sentimental value influence consumers’ purchase intention, choice and brand attitude? On the one hand, previous research suggests that consumers who previously had a high sentimental value item may strategically avoid acquiring an identical item in order to protect the memory or status of the original item (Zaubereman et al. 2009). On the other hand, the sentimental value of the original item may have positive effects that carry over to duplicate, similar products or even the entire brand. That is, perhaps the Nike shoes worn by the runner who won her first race somehow cause other Nike shoes to also hold similar associations. To the extent that the new item (other Nike shoes) also evokes the same associations as the original item, there is no theoretical reason that sentimental value couldn’t, in a sense, spill over from one object to another. This question, in particular, is highly relevant to marketing managers. If sentimental value can travel with a brand, and not just with a specific object, it may be possible to use sentimental value to create strong brand associations. That is, sentimental value may become an antecedent to brand value.

Practical Implications
Aside from the theoretical contributions outlined above, this research has important practical implications both for consumers and for marketers. For consumers, a straightforward implication is that controlling the circumstances surrounding product acquisitions can have dramatic impact on the longevity of enjoyment with a product. Specifically, consumers can increase sentimental value of purchases by controlling the timing, location, and individuals with whom they make these purchases. To the extent that rich associations with significant others and/or special events can be actively established for products, consumer wellbeing is likely to benefit, and for potentially long periods of time. For example, a lamp purchased on a random day for home may have no sentimental value, but a lamp purchased on a birthday may have high sentimental value; a mug purchased at a local store may have no sentimental value, but a mug purchased on a vacation with family may have high sentimental value. In both of these cases, if sentimental value can be maximized, the lamp and the mug may bring joy to the consumer for far longer. By knowing the antecedents to sentimental value and changing purchasing behaviors to capitalize on those antecedents, consumers can prolong happiness with products.

Finally, this work has practical implications for marketing managers. Specifically, firms should be careful when attempting to imbue objects with sentimental value. Though an object is likely to be loved longer by consumers if is sentimentally valuable, such an object is also likely to be disposed of later on, thus reducing repeat purchases. For instance, if Apple creates sentimental value for a purchased iPhone, though the consumer may enjoy their phone longer, they may be less likely to purchase the next generation model because the sentimental value of the original one slowed hedonic adaptation. However, to the extent that firms do choose to imbue an item with sentimental value, they can do so by offering promotions that coincide with special events or times in a consumer’s life. For instance, MINI already does this via a college graduate
program and offers a $500 cash discount for new college graduates. Presumably, the idea is that college graduates will not just be more likely to buy a MINI due to the price promotion, but will also associate the car with graduation, a special time in their life. If so, then, perhaps, this sentimental value will exist not just for the specific car that they purchased, but, if as aforementioned, sentimental value can transfer from a product to a brand, they will have sentimental value for the MINI brand itself. Though they may hold on to this particular car longer, when it eventually does become time to purchase a new car, they may be more likely to buy a MINI.

Limitations

Though the results of our experiments are consistent and robust, this work has several limitations that should be considered. First, several of our studies asked participants to self-report objects that were either sentimentally valuable to them or not. Though we control for the variations in these reported objects (e.g., category level dummy variables, cost, length of ownership, and importance) 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 Study 3 where we imbued specific objects 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
(Tetlock et al. 2000). Though we agree that this is possible, this concern is limited because we
also observe our effect for non-gifts which are not susceptible to such social desirability bias. 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 indicate decreases for objects
that were purchased for the self. 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. Our data suggest that it is not the case. In fact, we have found a strong
negative relationship between initial happiness with an object and change in happiness, such that
the higher the initial happiness rating an object has, the greater is the decrease in happiness over
time. This observation is also consistent with recent work showing that greater liking leads to
greater satiation (DePaoli and Khan 2014).

Finally, though we took great care to measure hedonic adaptation across a range of time
periods (45 days in Study 2A to approximately 9 months in Study 3), it is possible that the
benefit that sentimental value provides to consumers diminishes over very long time periods.
Though we doubt this to be the case given that we saw no evidence of a decrease in sentimental
value with time when the underlying associations remained intact, future research is needed to
understand the duration with which sentimental value persists.
In sum, there are many prescriptions for how consumers should step off the metaphorical “hedonic treadmill” (Brickman and Campbell 1971). We provide another, easily actionable way in which consumers 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 influences of hedonic adaptation.
REFERENCES


Table 1: Sources of sentimental value in Studies 1A and 1B.

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<th>Coding</th>
<th>Study 1A Associations</th>
<th>Study 1B Associations</th>
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<td>Event or Time</td>
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<table>
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<tr>
<th>Coding</th>
<th>Study 1A Associations</th>
<th>Study 1B Associations</th>
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Note—The bottom panel reflects data only from respondents who indicated that the object was highly sentimentally valuable (a 7 on the scale used to measure sentimental value).
Table 2: The coefficients of regressions on object type (e.g. gift vs. non-gift, sentimental vs. not-sentimental), the category level dummy variables, natural log of cost, (length of ownership and importance) in Studies 2A, 4 and 5.

<table>
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<tr>
<th>IV</th>
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<th>Study 4</th>
<th>Study 5</th>
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<td>LN(WTA+1)</td>
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<tr>
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<td>-</td>
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<td>3.76***</td>
<td>15.75***</td>
<td>25.35***</td>
<td>3.64***</td>
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</table>

Note—† \(p < .1\); * \(p < .05\); ** \(p < .01\); *** \(p < .001\) (two-tailed).

\(\text{a}\) Length of ownership was the same for all participants in Study 2A.

\(\text{b}\) Importance was not measured in Studies 2A and 5.
Figure 1: Components of Utility

Utility

Feature-Related Utility

Sentimental Value

Associations with a significant other

Non-Feature-Related Utility

Others

Associations with a special event or time
Figure 2: Initial and current happiness with gifts and purchases in Study 2A.

Note—Error bars represent standard errors.
Figure 3: Initial and current happiness in Study 2B.

Note—Error bars represent standard errors.
Figure 4: Results of Part I and Part II: Initial and current happiness with items of participants who completed both Part I and Part II in Study 3.

Results of Part I, Part II and Part III: Initial and current happiness with items of participants who completed all three parts in Study 3.

Note—Error bars represent standard errors.
Figure 5: Initial and current happiness with items in Study 4.

Note—Error bars represent standard errors.
Figure 6: Mediation analysis, Study 4.

Note—Recall task coded as 1 = high sentimental value, 0 = low sentimental value; * p < .05; ** p < .01; *** p < .001 (two-tailed)
Figure 7: Initial and current happiness with items in Study 5.

Initial and current feature related utility in Study 5. Feature related utility was rated on a 7-point scale, 1 = Not at all, 11 = Very much. Error bars indicate the standard error of the mean.

Note—Error bars represent standard errors.
Figure 8: Mediation analysis, Study 5.

Note—Recall task coded as 1 = high sentimental value, 0 = low sentimental value; * p < .05; ** p < .01; *** p < .001 (two-tailed)
Figure 9: Initial and current sentimental value in Study 6.

Initial and current happiness in Study 6.

Note—Error bars represent standard errors.
Appendix A

Correlations in Study 1B

<table>
<thead>
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<th>Variables</th>
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<td>3. A special event or time</td>
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<td>5. Purchase</td>
<td>-.32***</td>
<td>.32***</td>
<td>-.34***</td>
<td>-.38***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Gift</td>
<td>.15**</td>
<td>-.02</td>
<td>.10†</td>
<td>.12*</td>
<td>-.59***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Inheritance</td>
<td>.22***</td>
<td>-.24***</td>
<td>.20**</td>
<td>.23***</td>
<td>-.35***</td>
<td>-.14*</td>
<td></td>
</tr>
<tr>
<td>8. Any of 3,4,6,7</td>
<td>.60***</td>
<td>-.39***</td>
<td>.63***</td>
<td>.75***</td>
<td>-.59***</td>
<td>.41***</td>
<td>.25***</td>
</tr>
</tbody>
</table>

Note—†p < .1; * p < .05; ** p < .01; *** p < .001 (two-tailed)

Variables 1-2 are ratings on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree)

Variables 3-7 are dummy variables (1 = yes, 0 = no)

Variable 8 is a dummy variable. It has a value of 1 if at least one of variables 3,4,6,7 has a value of 1. Otherwise, it has a value of 0.
## Appendix B

### Categories of products by conditions in Studies 2A, 4 and 5.

<table>
<thead>
<tr>
<th>Category</th>
<th>Study 2A</th>
<th>Study 4</th>
<th>Study 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gifts</td>
<td>Purchases</td>
<td>High SV</td>
</tr>
<tr>
<td></td>
<td>Count</td>
<td>% Within Condition</td>
<td>Count</td>
</tr>
<tr>
<td>Books, Movies, Music, and Video Games</td>
<td>33</td>
<td>12.80%</td>
<td>14</td>
</tr>
<tr>
<td>Car or Car Accessories</td>
<td>3</td>
<td>1.20%</td>
<td>2</td>
</tr>
<tr>
<td>Clothing and Clothing Accessories</td>
<td>98</td>
<td>38.00%</td>
<td>40</td>
</tr>
<tr>
<td>Electronics and Electronic Accessories</td>
<td>23</td>
<td>8.90%</td>
<td>27</td>
</tr>
<tr>
<td>Household Item</td>
<td>76</td>
<td>29.50%</td>
<td>48</td>
</tr>
<tr>
<td>Jewelry</td>
<td>9</td>
<td>3.50%</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>2.30%</td>
<td>2</td>
</tr>
<tr>
<td>Sporting Equipment, Musical Instruments, and Games (not Video Games)</td>
<td>10</td>
<td>3.90%</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>258</td>
<td>100.00%</td>
<td>149</td>
</tr>
</tbody>
</table>

**Notes:** The items of Study 2A are the items participants still possessed at the time of Part II.
## Appendix C

### Product Categorization Details

<table>
<thead>
<tr>
<th>Original Category</th>
<th>Original Subcategory</th>
<th>Frequency</th>
<th>% of Items</th>
<th>Final Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book</td>
<td>-</td>
<td>23</td>
<td>2.82%</td>
<td>Books, Movies, Music, and Video Games</td>
</tr>
<tr>
<td>Books, Movies, Music, and Video Games*</td>
<td>-</td>
<td>5</td>
<td>0.61%</td>
<td>Books, Movies, Music, and Video Games</td>
</tr>
<tr>
<td>Car or Car Accessories</td>
<td>Car</td>
<td>12</td>
<td>1.47%</td>
<td>Car or Car Accessories</td>
</tr>
<tr>
<td></td>
<td>Car Accessory</td>
<td>10</td>
<td>1.23%</td>
<td>Car or Car Accessories</td>
</tr>
<tr>
<td>Clothing and Clothing Accessories</td>
<td>Clothing Accessories</td>
<td>36</td>
<td>4.41%</td>
<td>Clothing and Clothing Accessories</td>
</tr>
<tr>
<td></td>
<td>Footwear</td>
<td>34</td>
<td>4.17%</td>
<td>Clothing and Clothing Accessories</td>
</tr>
<tr>
<td></td>
<td>General Clothing</td>
<td>107</td>
<td>13.11%</td>
<td>Clothing and Clothing Accessories</td>
</tr>
<tr>
<td></td>
<td>Handbag</td>
<td>10</td>
<td>1.23%</td>
<td>Clothing and Clothing Accessories</td>
</tr>
<tr>
<td>Electronics</td>
<td>Electronic Accessories</td>
<td>41</td>
<td>5.02%</td>
<td>Electronics and Electronic Accessories</td>
</tr>
<tr>
<td></td>
<td>Electronics</td>
<td>155</td>
<td>19.00%</td>
<td>Books, Movies, Music, and Video Games</td>
</tr>
<tr>
<td></td>
<td>Video Game</td>
<td>22</td>
<td>2.70%</td>
<td>Books, Movies, Music, and Video Games</td>
</tr>
<tr>
<td></td>
<td>Video Game System</td>
<td>22</td>
<td>2.70%</td>
<td>Books, Movies, Music, and Video Games</td>
</tr>
<tr>
<td>Game or Toy</td>
<td>General Game or Toy</td>
<td>27</td>
<td>3.31%</td>
<td>Sporting Equipment, Musical Instruments, and Games (not Video Games)</td>
</tr>
<tr>
<td></td>
<td>Musical Instrument</td>
<td>9</td>
<td>1.10%</td>
<td>Sporting Equipment, Musical Instruments, and Games (not Video Games)</td>
</tr>
<tr>
<td>Household Item</td>
<td>General Household Item</td>
<td>149</td>
<td>18.26%</td>
<td>Household Item</td>
</tr>
<tr>
<td></td>
<td>Toiletry</td>
<td>23</td>
<td>2.82%</td>
<td>Household Item</td>
</tr>
<tr>
<td></td>
<td>Tool</td>
<td>15</td>
<td>1.84%</td>
<td>Jewelry</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>-</td>
<td>65</td>
<td>Jewelry</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>33</td>
<td>4.04%</td>
<td>Jewelry</td>
</tr>
<tr>
<td></td>
<td>Sporting Equipment, Musical Instruments, and Games (not Video Games)*</td>
<td>-</td>
<td>8</td>
<td>0.98%</td>
</tr>
<tr>
<td></td>
<td>Stationery</td>
<td>-</td>
<td>10</td>
<td>1.23%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>816</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

*Note: “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.*
### Appendix D

Percentage of Change in Happiness in All Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Condition</th>
<th>Change in happiness</th>
<th>Pearson Chi-Square</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Decrease</td>
<td>No change</td>
<td>Increase</td>
</tr>
<tr>
<td>Study 2A</td>
<td>Gift</td>
<td>28.7%</td>
<td>48.8%</td>
<td>22.5%</td>
</tr>
<tr>
<td></td>
<td>Purchase</td>
<td>44.3%</td>
<td>39.6%</td>
<td>16.1%</td>
</tr>
<tr>
<td>Study 2B</td>
<td>Commemoration</td>
<td>37.9%</td>
<td>50.7%</td>
<td>11.4%</td>
</tr>
<tr>
<td></td>
<td>No-commemoration</td>
<td>50.0%</td>
<td>40.7%</td>
<td>9.3%</td>
</tr>
<tr>
<td>Study 3</td>
<td>Gift from partner</td>
<td>27.5%</td>
<td>60.8%</td>
<td>11.8%</td>
</tr>
<tr>
<td></td>
<td>Gift from experimenter</td>
<td>60.3%</td>
<td>29.3%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Study 3</td>
<td>(Part I and Part II)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study 4</td>
<td>High-sentimental value</td>
<td>25.7%</td>
<td>52.3%</td>
<td>22.0%</td>
</tr>
<tr>
<td></td>
<td>Low-sentimental value</td>
<td>50.0%</td>
<td>41.8%</td>
<td>8.2%</td>
</tr>
<tr>
<td>Study 5</td>
<td>High-sentimental value</td>
<td>14.3%</td>
<td>53.1%</td>
<td>32.7%</td>
</tr>
<tr>
<td></td>
<td>Low-sentimental value</td>
<td>46.2%</td>
<td>35.6%</td>
<td>18.3%</td>
</tr>
<tr>
<td>Study 6</td>
<td>Wedding ring - married</td>
<td>34.5%</td>
<td>53.4%</td>
<td>12.1%</td>
</tr>
<tr>
<td></td>
<td>Wedding ring - divorced</td>
<td>81.8%</td>
<td>6.1%</td>
<td>12.1%</td>
</tr>
</tbody>
</table>
Appendix E

Stimuli from Study 3. Male participants received the calendar toy (on the left), and female participants received the man-made grass toy (on the right).