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Mementos and the endowment effect

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Abstract

This research provides evidence for a new moderator of the endowment effect: having a memento of the endowed object. Three studies adapting classic endowment effect paradigms and using a variety of endowment objects and mementos demonstrate that having a memento of an endowment increases willingness to trade the endowment and decreases selling prices for the endowment. We provide evidence that mementos attenuate the endowment effect regardless of whether the memento is a separate small gain when facing the loss of the endowment or a small part of the original endowment that is kept. Examining mementos in context of the endowment effect not only provides insight into the psychology underlying the reluctance to part with one's endowment but also other consumer disposition behaviors.

KEYWORDS
disposition, endowment effect, loss aversion, memento, psychological ownership

1 | INTRODUCTION

Whether photographs from a birthday celebration, souvenirs from a vacation, or ticket stubs from a concert, mementos of experiences are common consumer objects. Any "logical or symbolic reminder" can serve as a memento (Belk et al., 1989), though some are more idiosyncratic than others. Locks of hair were once common mementos of people as depicted in works from *Sense and Sensibility*, in which Willoughby and Edward keep locks of Marianne and Lucy's hair, respectively, to *The Fellowship of the Ring*, in which Gimli asks for a single strand of Galadriel's hair before departing Lothlorien on the journey to Mordor. Consumers also keep mementos of objects, saving labels from wine bottles or keeping the license plate from an old car. Realtors gift home sellers commissioned paintings of their home upon closing, and decluttering experts suggest photographing items one has trouble throwing away (Moorhead, 2017). Decluttering blogs further advise photographing mementos, essentially keeping a memento of a memento, in service of decluttering mementos. In these examples, the notion that having a memento of something or someone makes it easier to part with is an underlying theme. Even for mementos of experiences, recent research finds that more than being simply kept for reminiscing purposes, mementos alleviate feelings of sadness associated with the end of an experience, in a sense making it easier to part with the experience (Chu & Shu, 2018).

We examine this notion in context of the endowment effect, the tendency for people to demand more to give up one's possessions than they are willing to pay to acquire them and one of the "most robust findings of the psychology of decision making" (Knetsch et al., 2001, p. 257). Various moderators of the endowment effect have been identified, including incidental affect, object valence, and cross-cultural differences, providing additional understanding of the psychological factors at play (Brenner et al., 2007; Lerner et al., 2004; Maddux et al., 2010). This research proposes another moderator: having a memento of the endowment, that is, in keeping with Belk et al.'s (1989) aforementioned definition, a logical or symbolic reminder of the item that is potentially transacted. Examining mementos in context of the endowment effect not only further illuminates the psychological mechanisms underlying this important phenomenon but also provides insight into oft-observed consumer behaviors.

1.1 | Mementos and the endowment effect

Why might mementos attenuate the endowment effect? The prevailing prospect theory account of the endowment effect centers on loss aversion, the idea that losses loom larger than gains, as reflected in the value function, which is steeper in the domain of losses than gains. Thus, the value lost by giving up an endowment is greater than the value gained by obtaining the same endowment. Having a memento of an endowment may therefore attenuate the endowment effect by acting as a "silver lining," similar to Thaler's (1985) silver lining principle, in which segregating small gains from larger losses can maximize utility because the value function is steepest at the origin. Thaler's favored example of silver linings is that of rebates, which segregate a small savings (gain) from a larger expenditure (loss); we surmise that providing a small gain in the form of a memento amidst the larger loss of parting with an endowment may similarly improve the psychological value of parting with the endowment.

While the discussion above focuses on a cognitive-based explanation of the endowment effect, emotional attachment-based explanations for the endowment effect also suggest the effectiveness of a memento (e.g., Ariely & Simonson, 2003; Kogut & Kogut, 2011; Shu & Peck, 2011). Ariely et al. (2005) proposed understanding loss aversion in the endowment effect as being driven by both the differing cognitive perspective of buyers versus sellers and by emotional attachment, which moderates the degree to which parting with an endowment involves a loss. Indeed, individual differences in possession attachment, as reflected in adult attachment styles in close relationships, have been demonstrated to affect selling prices and moderate the endowment effect (Kogut & Kogut, 2011). Shu and Peck (2011) find further support for the role of emotional attachment, demonstrating that emotional attachment mediates the effect of many previously identified moderators of the endowment effect and consists of both psychological ownership of the endowment, which concerns the extent to which a loss is perceived, and affective reaction, which concerns the intensity of the loss. Having a logical or symbolic reminder of the endowment may help to sustain psychological ownership of the endowment and thereby lessen negative emotional reactions from parting with the endowment (Chu, 2018).

The existing literature documents various cases of attenuated endowment effects when part of an endowment is kept, suggesting the effectiveness of a memento. However, prior studies examine endowments consisting of multiples of identical objects. For example, Horowitz et al. (1999) observed that participants endowed with multiples of an identical object demanded more when parting with their complete endowment than when parting with some of their endowment (e.g., parting with two of three identical mugs vs. three of three identical mugs). Schurr and Ritov (2014) similarly find that the endowment effect is attenuated when sellers are not fully depleted of endowments of multiple units of identical chocolates or pens, while Burson et al. (2013) demonstrate that multiple unit holdings attenuate the endowment effect by varying whether endowments of identical chocolates or pens are framed as a single unit (e.g., a "box") or multiple units of the same item.

Although there are similarities between having a memento of an endowment and keeping a part of an endowment, there are key differences between our investigation of mementos and the aforementioned research. Rather than one unit of a multi-unit endowment of identical items, the mementos examined here are of the smaller representative kind described at the beginning of this paper and more typical of consumer situations. Also, unlike previous studies where a substantial portion of the endowment is kept (e.g., keeping two of three identical mugs), we focus our investigation on mementos of little to no value in comparison to the original endowment. In the studies that follow, we demonstrate that mementos can attenuate the endowment effect: having a memento of an endowment increases willingness to trade the endowment and lowers the willingness to accept price to sell the endowment. In addition, we not only examine mementos that involve retaining a small part of the endowment, but also examine mementos that involve a small gain that is not part of the original endowment; in other words, we examine cases where the entire endowment is entirely relinquished, but a small gain in the form of a memento of the endowment is offered at the same time that one faces the prospect of the larger loss of the endowment. This further differentiates our investigation from aforementioned cases of attenuated endowment effects when keeping a part of the endowment.

2 | STUDY 1: SELLING AND BUYING PRICES FOR A FAVORITE CLOTHING ITEM

A common manifestation of the endowment effect is the discrepancy between buying and selling prices. Study 1 therefore examines the effect of mementos on willingness to accept to sell versus willingness to pay to buy the item. Using an approach adapted from prior research on the endowment effect (Kogut & Kogut, 2011), we asked participants about their hypothetical willingness to accept to sell and willingness to pay for an actual item that they own, with and without mementos of the item.

2.1 | Method

A total of 250 participants were recruited to participate in the study through Amazon Mechanical Turk (gender: 46% male, age: $Mdn = 36$). Participants were asked to "think about a favorite piece of clothing that you often wear and costs around $50" and to briefly describe the item. To further encourage them to think about an actual clothing item in their possession, they then rated the clothing item's attractiveness and its importance to them as one of their possessions on a 7-point scale ranging from 1 (*very unattractive/unimportant*) to 7 (*very attractive/important*).

Participants were randomly assigned to one of two conditions, memento and no memento, and then presented with two different scenarios. In the first scenario, to assess selling prices, all participants read: "Imagine that someone asked to buy the clothing item from you. What would be the lowest price that you would be willing to accept in order to sell that person your clothing item?" Those in the memento condition were additionally told, "If you do end up selling the clothing item, you can still take many photos of it to keep as a memento." They were then asked to enter their price in dollars. In the second scenario, to assess buying prices, participants read: "Suppose you lost the clothing item, and it was possible to buy it back (e.g., you accidentally donated the clothing item, and you can buy it back from the thrift store). What would be the highest price that you would be willing to pay in order to get it back?" Those in the memento condition were additionally told, "If you do not end up buying it back, you can still take many photos of it to keep as a memento." Participants were then again asked to enter their price in dollars. The order in which the scenarios were presented was randomized across participants. Eleven participants who failed to describe a favorite clothing item as instructed were removed from the data.

2.2 | Results and discussion

As the order in which the scenarios were presented did not significantly affect selling or buying prices, the data were collapsed across order for analysis, as with the original research from which this study was adapted (Kogut & Kogut, 2011). A two-way mixed ANOVA was first conducted with scenario (selling price vs. buying price) as the within-subjects factor and condition (memento vs. no memento) as the between-subjects factor. This analysis revealed a significant effect of scenario ($F = 24.94$, $p < .001$) and condition ($F = 5.01$, $p = .025$), as well as a significant interaction between scenario and condition ($F = 4.74$, $p = .030$).

Selling prices were significantly higher than buying prices in both the no memento and memento conditions (see Figure 1 and Table A1) using paired sample t tests ($M = 80.02$ vs. $M = 52.53$, $t(117) = 3.99$, $p < .001$ for the no memento condition; $M = 56.53$ vs. $M = 45.74$, $t(120) = 3.08$, $p = .003$ for the memento condition). However, the difference between buying and selling prices was significantly smaller in the memento condition compared to the no memento condition based on an independent sample t test ($M = 10.79$ vs. $M = 27.49$, $t(237) = 2.16$, $p = .032$). Another independent sample t test was then conducted to examine the difference in selling prices between the no memento and memento conditions. As the endowment effect is driven by "owner's reluctance to part with their endowment, rather than by buyers' unwillingness to part with their cash" (Kahneman et al., 1991, p. 196), we predicted that mementos would attenuate the endowment effect by lowering selling prices. Consistent with our predictions, sellers with mementos indeed reported lower selling prices than sellers without mementos ($M = 80.02$ vs. $M = 56.53$, $t(141) = 2.49$, $p = .014$). The difference in buying prices between the no memento and memento conditions was not statistically significant using an independent sample t test ($M = 52.53$ vs. $M = 45.74$, $t(237) = 1.21$, $p = .228$). We did not have predictions regarding the direction of the effect of mementos on buying prices. While mementos could lower buying prices due to the value of the memento, these results suggest that mementos affect selling prices rather than buying prices, consistent with a moderation of the owners' values in the endowment effect.

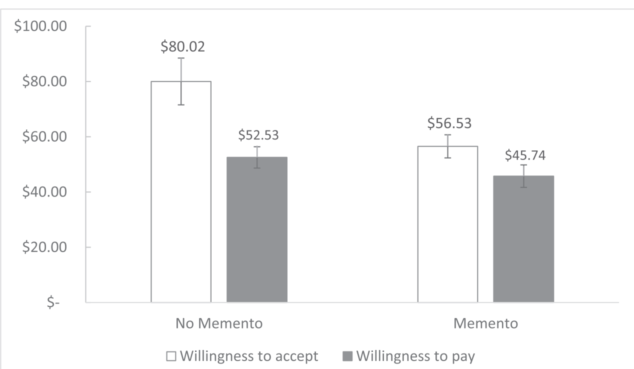

FIGURE 1 Willingness to accept and willingness to pay for those with and without mementos. *Note*: Error bars represent standard errors.

3 | STUDY 2: WILLINGNESS TO TRADE AN ENDOWED CD SET

Study 2 further examines whether mementos can attenuate the endowment effect using a common endowment effect paradigm: willingness to trade an endowed option. As the endowment effect is driven by sellers' reluctance to part with their endowment, we compare the willingness to give up (trade) an endowed option for sellers with a memento of an endowed option to those without a memento of an endowed option. We predict that those with a memento will be more willing to trade their endowed option compared to those without a memento. As the memento in the previous study, a photo of a favorite clothing item, is best characterized as a segregated gain where the entire endowment is relinquished and the memento is not part of the original endowment, in this study, we also examine whether the memento must be a segregated gain in order to attenuate the reluctance of sellers to part with their endowment or if retaining part of the original endowment can have similar effects on sellers' willingness to part with their endowment.

3.1 | Method

Participants were recruited to participate in the study through Amazon Mechanical Turk ($N = 950$, gender: 45% male, age: $Mdn = 37$) and were randomly assigned to one of five conditions. The first set of three conditions was designed to examine the effect of a memento when it is a segregated gain (gain conditions), while the second set of two conditions was designed to examine the effect of a memento when it is a retained part of the original endowment (retain conditions). The endowed item was a boxed CD set of one's favorite band's music, while the memento was a 4-inch × 6-inch photo featuring the cover of the boxed CD set.

All participants were told, "Imagine that you have won a raffle drawing. Your prize is a boxed CD set of your favorite band's music. The boxed set features the band's entire catalog in unmatched quality." Those assigned to the two retain conditions were additionally told, "A small 4-inch × 6-inch photo featuring the cover of the boxed CD is also included as a bonus." All participants then completed an ownership imagery exercise used in previous research in which they were asked to think about bringing home their prize and briefly share their thoughts about where they would keep the prize and what they would do with it (Shu & Peck, 2011). Afterwards, all participants were told, "At the time you go to pick up your prize, you are given the option to trade your prize for a live concert DVD of your favorite band. The concert DVD features the band's epic performance at Madison Square Garden." They were then asked whether they would trade their prize for the concert DVD. Participants were randomly assigned to have a memento or not have a memento of their prize. In all memento conditions, the memento was the bonus 4-inch × 6-inch photo featuring the cover of the boxed CD; note that the difference between the gain and retain conditions was in how the receipt of this photo was framed in the scenario. In the gain conditions, it is mentioned only after the trade request, while in the retain conditions, it is explicitly provided as part of the original endowment.

The retain conditions consisted of memento and no memento conditions. In the retain: memento condition, participants learned about the bonus photo at the start of the scenario and then were told that they could keep the photo even if they decided to trade their prize. In this way, the memento is framed as part of the original endowment that may be retained. Participants in the retain: no memento condition also learned about the bonus photo at the start of the scenario, but then were not told any additional information about what would happen if they decided to trade the prize.

The gain conditions consisted of no memento, memento trade, and memento trade or keep conditions; in these conditions, the photo is not part of the original endowment and is only mentioned at the possible point of trade, thus becoming a separate small gain. In the gain: memento trade condition, participants were told that they would receive the bonus photo featuring the cover of the CD set only if they decided to trade the CD set. In the gain: memento trade or keep condition, participants were told that they would receive the photo regardless of whether they decided to keep or trade the CD set. In the gain: no memento condition, participants were not told any additional information about the photo. Twenty-four participants who did not complete the ownership imagery exercise as instructed were removed from the data.

3.2 | Results and discussion

We first examine the gain conditions to see how a segregated small memento gain affects willingness to trade (see Figure 2). Consistent with Study 1 and our predictions, 75.5% of those in the gain: no memento condition chose to stay with their endowed option compared to 63.9% of those in the gain: memento trade condition

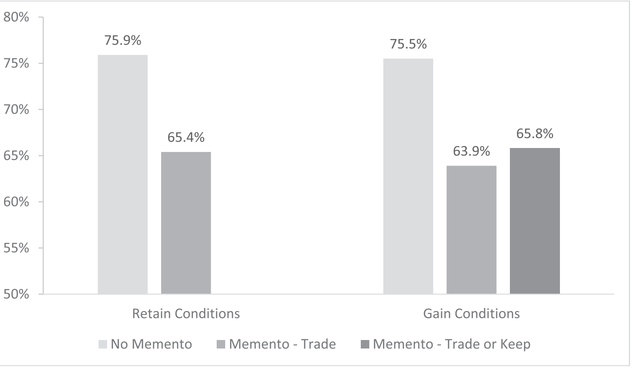

FIGURE 2 Share of participants choosing to stay with their endowed option

(χ^2(1, N = 367) = 5.86, p = .015) and 65.8% of the those in the gain: memento trade or keep conditions (χ^2(1, N = 368) = 4.25, p = .039). As with Study 1, the existence of a memento, even when it is separate from the original endowment, increases willingness to trade and reduces the endowment effect.

As for the retain conditions, 75.9% of those in the retain: no memento condition chose to stay with their endowed option compared to 65.4% of those in the retain: memento condition (χ^2(1, N = 375) = 5.00, p = .025). In this case, the memento is a part of the original endowment, yet it has the same effect of increasing willingness to trade as a memento that is added as a segregated gain. Thus, whether the memento is a segregated gain or a retained portion of the endowment, sellers with a memento are more willing to trade their endowed option compared to sellers without a memento. These findings suggest that mementos can attenuate the reluctance of sellers to part with their endowment by acting as a silver lining, as reflected in the gain conditions. At the same time, as reflected in the retain conditions, mementos need not be a segregated gain to be effective.

4 | STUDY 3: SELLING PRICES FOR AN ENDOWED WATER BOTTLE

Studies 1 and 2 demonstrate that mementos can attenuate the endowment effect by lowering owners' reluctance to part with their endowment. While many investigations of the endowment effect use hypothetical scenarios (e.g., Brenner et al., 2007; Carmon & Ariely, 2000), including the original studies from which Studies 1 and 2 were adapted, Study 3 uses actual endowments with an incentive-compatible design to further test whether mementos can lower selling prices.

4.1 | Method

Undergraduate and graduate students at a western university were recruited to participate in the study (N = 121). Participants were seated at cubicles with a university water bottle placed on their desk. The water bottle was a standard plastic water bottle featuring the university logo on the side. Participants were randomly assigned to one of three conditions: no memento, memento retain, and memento gain. In the retain and gain conditions, a university decal featuring the same university logo was also placed on the desk next to the water bottle. Participants completed the study in groups of 10 to 20 participants. All participants were told that they would be participating in a hypothetical marketplace transaction and that one participant in the room would be randomly selected to have their decisions completed for real in an incentive-compatible design.

Participants were first asked to imagine that they had been randomly selected to keep the university water bottle. All participants then completed the same ownership imagery exercise as in Study 2 in which they were asked to think about bringing home their water bottle and briefly share their thoughts about where they would keep it and what they would do with it. Those in the retain condition were additionally asked to imagine that they had been randomly selected to keep the university decal and completed the same ownership imagery exercise for the decal as well.

In the ensuing marketplace transaction, participants were asked to continue to imagine that the water bottle was theirs to keep. They were given the option of selling their water bottle for money. Participants recorded their valuations by indicating their willingness to sell the water bottle at each possible price along a continuum of \$0 to \$18 at \$.50 intervals, consistent with Becker et al. (1964) valuation elicitation procedures. Participants in the retain condition were additionally told that they could keep the university decal even if they sold the water bottle, while those in the gain condition were additionally told that they would receive the university decal regardless of whether they ended up selling or keeping the water bottle. Similar to Study 2, we expected that the retain participants would see the decal as a part of the original endowment, while we expected that the gain participants would see it as a separate small gain.

After the final selling price for the water bottle was randomly determined, participants in the no memento and gain conditions were separately asked to report their willingness to pay for the university decal. Those in the retain condition were not asked to report their willingness to pay for the university decal due to concerns that the original inclusion of the decal in their endowment would influence their estimates. The winner of the random draw was then announced, and the transaction was completed for the participant (i.e., the participant either kept the water bottle or received money for the water bottle). Seven participants who did not follow instructions as directed were removed from the data.

4.1.1 | Exploratory process measures

To explore possible psychological mechanisms, participants also completed measures of psychological ownership and affect. Prior to the marketplace transaction, psychological ownership of the water bottle was measured with a three-item scale used in previous research (Shu & Peck, 2011). For those in the retain and gain conditions, psychological ownership of the decal was also measured with the same three-item scale. Before the final price was determined, participants imagined the result was receiving money, rather than keeping the water bottle, and rated the extent to which they would feel various positive and negative emotions using a scale from previous research (Shu & Peck, 2011).

4.2 | Results and discussion

4.2.1 | Main results

Participants in the no memento condition reported higher selling prices ($M = 9.36$, $SD = 3.66$; see Table 1) than those in the retain ($M = 6.49$, $SD = 3.66$) and gain conditions ($M = 6.60$, $SD = 3.81$). A one-way ANOVA was performed to compare selling prices, finding a statistically significant difference between conditions ($F(2, 111) = 7.53$, $p = .001$). Post hoc tests revealed a statistically significant difference between the no memento and retain conditions ($p = .002$), as well as the no memento and gain conditions ($p = .005$). There was no statistically significant difference between the retain and gain conditions ($p = .991$).

Because participants in the retain and gain conditions are receiving a memento with potential monetary value (the decal), one could argue that the wealth effect from receiving that gain is lowering their selling prices for the water bottle relative to the no memento condition participants who do not receive such a gain. As a conservative adjustment for this wealth effect, we used each participant's reported willingness to pay for the university decal in the no memento condition to adjust their individual endowment selling prices to account for their monetary value of the decal. The memento-adjusted selling price ($M = 8.52$, $SD = 3.35$) remained higher than selling prices in the retain

TABLE 1 Study 3: Summary of results for valuation, psychological ownership, and affect

	No memento		Retain		Gain	
	M	*SD*	*M*	*SD*	*M*	*SD*
Valuation (\$)	9.36	3.66	6.49	3.66	6.60	3.81
Positive affect	4.08	1.42	4.31	1.33	4.28	1.28
Negative affect	2.48	1.42	1.92	1.05	2.42	1.49
Psychological ownership (bottle)	4.04	1.71	2.91	2.16	3.39	2.09
Psychological ownership (decal)			4.41	2.18	4.51	1.98

and gain conditions. A one-way ANOVA was again performed to compare selling prices with the memento-adjusted selling price, finding a statistically significant difference between conditions ($F(2, 111) = 3.91$, $p = .023$). Post hoc tests revealed a statistically significant difference between the no memento and retain conditions ($p = .036$) and a marginally significant difference between the no memento and gain conditions ($p = .060$). Testing this wealth effect from the opposite direction, we also used reported willingness to pay for the university decal in the gain condition as an alternate adjustment for endowment selling prices. The individual willingness to pay for the decal was added to the selling price for those in the gain condition to account for the wealth effect of the monetary value of the decal. The memento-adjusted selling price remained significantly lower than selling prices in the no memento condition with an independent sample t test ($t(73) = 1.98$, $p = .051$). These results suggest that the memento's perceived monetary value cannot fully account for our results.

4.2.2 | Psychological ownership and affective reaction

The pre-transaction measures for positive affect (Cronbach's $\alpha = .822$), negative affect (Cronbach's $\alpha = .877$), psychological ownership of the water bottle (Cronbach's $\alpha = .936$), and psychological ownership of the decal (Cronbach's $\alpha = .934$) each demonstrated high reliability and were each averaged to form a single measure. A one-way ANOVA performed for each of these measures found no statistically significant differences between conditions (for positive affect, $F(2, 111) = 0.36$, $p = .700$; for negative affect, $F(2, 111) = 2.04$, $p = .135$; for psychological ownership of the bottle, $F(2, 111) = 0.87$, $p = .420$; for psychological ownership of the decal, $F(2, 111) = 0.021$, $p = .885$).

To further explore the role of affect and ownership in the memento conditions, we conducted a series of multiple regression analyses (see Table A2). A multiple regression analysis predicting willingness to accept to sell the endowment with positive affect and negative affect as independent variables reveals a negative and significant effect of positive affect ($b = -0.696$, $SE = 0.321$, $t = -2.170$, $p = .033$) and a positive and significant effect of negative affect ($b = 0.891$, $SE = 0.323$, $t = 2.756$, $p = .007$). In other words, greater positive affect from the prospect of losing the water bottle significantly predicted lower valuation and greater negative affect from the prospect of losing the water bottle significantly predicted higher valuation. We then conducted a multiple regression analysis predicting positive affect and a separate analysis predicting negative affect with psychological ownership of the water bottle (the endowment) and psychological ownership of the decal (the memento) as independent variables. While neither variable significantly predicts positive affect, we find a positive and significant effect of psychological ownership of the water bottle on negative affect ($b = 0.255$, $SE = 0.107$, $t = 2.376$, $p = .020$) and a negative and significant effect of psychological ownership of the decal on negative affect ($b = -0.255$, $SE = 0.106$, $t = -2.392$, $p = .019$; see Table A3). In other words, greater psychological ownership of the water bottle significantly predicted greater negative affect from the prospect of losing the water bottle, which is consistent with prior research that increased psychological ownership of an item can heighten feelings of loss. At the same time, greater psychological ownership of the decal significantly predicted lower negative affect from the prospect of losing the water bottle. These results are consistent with the idea that having a logical or symbolic reminder of the endowment may help to lessen negative emotional reactions from parting with the endowment.

5 | CONCLUSION

This research is first to examine the moderating role of mementos in the endowment effect and to consider an endowment memento as either a small gain that is separate from the original endowment or as a portion of the endowment that is retained. The finding that an endowment memento in the form of a small gain reduces sellers' valuation of their endowments is also the first to demonstrate the use of the silver lining principle in the endowment effect. We also offer additional insight into when mementos moderate the endowment effect by considering the psychology underlying the endowment effect. As suggested by Study 3, while greater psychological ownership over the endowment predicts greater negative affect that comes from parting with the endowment, greater psychological ownership over the memento may reduce sellers' willingness to accept by reducing the negative emotional reaction from parting with the endowment. Our results are also consistent with earlier studies demonstrating attenuated endowment effects when part of an endowment of multiple identical objects is kept, and provide additional insight into the psychology of these previously demonstrated effects. Keeping an object that is identical to the object(s) that one is parting with should be very effective in reducing the loss of psychological ownership over the object(s) and can thus explain attenuated endowment effects in identical multi-unit endowments.

Our research also complements studies of the endowment effect apart from multiples of identical objects. Research on boundary conditions of loss aversion by Novemsky and Kahneman (2005) finds support for the idea that there is no loss aversion for goods that are given up as intended using risky endowment effect conditions; those authors propose that loss aversion does not emerge "when all the benefits of the good that is given up are present in the acquired good" (p. 123) based on "the agent's perception of the relationship between the good that is given up and the one that is acquired" (p. 124). Our research provides a variation of this proposition in a riskless environment, one in which a memento conceivably provides some of the benefits of the good that is given up, perhaps in the form of psychological ownership. Another contribution of this work to the endowment effect literature is in the solicitation of a willingness to pay for a previously owned item in Study 1, which can be seen as a variation of a pay-to-keep scenario recently used by Smitizsky et al. (2021) to provide evidence for differences in buy–sell strategies as an explanation for the endowment effect.

This research also contributes to an emerging literature on disposition, which has received considerably less attention in consumer research compared to acquisition and consumption (Arnould & Thompson, 2008; Jacoby et al., 1977). In contrast to its attention as a research topic, disposition is an increasingly popular subject in popular culture. Decluttering guru Marie Kondo is now a household name with a Netflix show, while bestselling self-help get-rid-of-it books, such as *The Joy of Less* and *It's All Too Much*, abound. Consistent with research showing that giving up an endowment entails negative affect, ethnographic research finds that disposition arouses sadness and negative feelings (Price et al., 2000). It is therefore unsurprising that advice tomes often devote extensive sections to helping readers overcome the challenges of parting with their possessions. Since having a memento of an endowment can lessen sellers' reluctance to part with their endowment, having a memento of a possession may similarly aid disposition. Indeed, many advised and observed disposition practices, such as taking photos of an item or giving an item to someone with a shared identity based on kinship or interest, allow consumers to maintain psychological ownership after disposition by proxy through ownership of the photo or ownership by someone close to the self, and thereby lessen negative affect associated with disposition (Chu, 2018; Coulter & Ligas, 2003; Lastovicka & Fernandez, 2005).

The implications of our research for disposition further present possibilities for the sizeable used goods market. More than twice the number of used vehicles are sold each year compared to new vehicles (Manheim, 2017), while the resale market for luxury goods is estimated to be $36 billion (Ducasse et al., 2019). Offering mementos of items to sellers, such as a special framed photo or a 3D model of a car, may encourage sales and lower selling prices. Charitable organizations can similarly encourage donations of used items with mementos, while realtors may find that a commissioned painting of a seller's home makes a more effective "listing gift" than closing gift for a reluctant seller.

Finally, as psychological ownership of the memento may lessen negative affect from parting with the endowment, what determines psychological ownership of the memento is an important question both practically and theoretically. The antecedents of psychological ownership, namely investing the self in the target, controlling the target, and intimately knowing the target (Pierce et al., 2003), suggest that mementos that are self-determined by the individual, rather than externally determined as in our studies, would produce stronger ownership feelings. While our studies used endowments of relatively little value (e.g., favorite clothing item, CD set, and water bottles) and small, non-valuable mementos (e.g., photos and decals), future research may examine bigger ticket items, such as furniture, cars, or homes. As the silver lining effect is more likely to occur for monetary gambles when the loss is larger for a given gain (Jarnebrant et al., 2009), mementos may also attenuate the endowment effect for larger endowments representing a greater loss and perhaps even more effectively than with smaller endowments. Future research in these areas may similarly lend insight not only into the psychological underpinnings of the endowment effect but also the important yet understudied topic of disposition.

DATA AVAILABILITY STATEMENT

Data are available on request from the authors.

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APPENDIX A

A.1 | Study 1 materials

Think about a favorite piece of clothing that you often wear and costs around $50 (e.g., a hat, coat, shirt, jeans, pants, and dress). Please briefly describe the item.

How attractive is this clothing item?

Rated on a 7-point scale ranging from 1 (very unattractive) to 7 (very attractive).

How important is this clothing item to you as one of your possessions?

Rated on a 7-point scale ranging from 1 (unimportant) to 7 (important).

[scenario order randomized]

[selling scenario]

Imagine that someone asked to buy the clothing item from you. What would be the lowest price you that would be willing to accept in order to sell that person your clothing item? [memento condition:] If you do end up selling the clothing item, you can still take many photos of it to keep as a memento.

[buying scenario]

Suppose you lost the clothing item, and it was possible to buy it back (e.g., you accidentally donated the clothing item, and you can buy it back from the thrift store). What would be the highest price that you would be willing to pay in order to get it back? [memento condition:] If you don't end up buying it back, you can still take many photos of it to keep as a memento.

TABLE A1 Study 1: Summary of results for valuation ($)

	No memento	Memento
Willingness to accept		
M	80.02	56.53
SD	92.00	46.05
Mdn	50.00	48.00
Willingness to pay		
M	52.53	45.74
SD	41.91	44.84
Mdn	50.00	40.00
WTA/WTP ratio	1.52	1.24

A.2 | Study 2 materials

Imagine that you have won a raffle drawing. Your prize is a boxed CD set of your favorite bands music. The boxed set features the bands entire catalog in unmatched quality. [Retain: A small 4-inch × 6-inch photo featuring the cover of the boxed CD is also included as a bonus.]

Now, think about yourself bringing home your prize. Where would you keep it? What would you do with it? Please enter your thoughts in the space provided below.

At the time you go to pick up your prize, you are given the option to trade your prize for a live concert DVD of your favorite band. The concert DVD features the bands epic performance at Madison Square Garden.

[Retain: Memento: The small photo featuring the cover of the CD is yours to keep even if you trade the CD.]

[Gain: Memento trade: You will receive a small 4-inch × 6-inch photo featuring the cover of the CD if you decide to trade the CD.]

[Gain: Memento trade or keep: You will receive a small 4-inch × 6-inch photo featuring the cover of the CD regardless of whether you keep or trade the CD.]

Would you trade your prize for the concert DVD?

Yes

No

TABLE A2 Study 3: Summary of multiple regression results predicting valuation

		Reg 1: All conditions	Reg 2: No memento	Reg 3: Memento retain and gain	Reg 4: Retain	Reg 5: Gain
Positive affect	*b*	−0.587	−0.454	−0.696	−0.158	−1.214
	SE	0.288	0.493	0.321	0.476	0.446
	t	−2.038	−0.920	−2.170	−0.332	−2.723
	p	.044	.363	.033	.742	.010
Negative affect	*b*	0.567	−0.183	0.891	1.267	0.784
	SE	0.288	0.493	0.323	0.606	0.385
	t	1.966	−0.372	2.756	2.091	2.038
	p	.052	.712	.007	.044	.050
Constant	*b*	8.720	11.6649	7.607	4.732	9.896
	SE	1.640	2.9060	1.787	2.844	2.395
	t	5.316	4.0140	4.257	1.664	4.132
	p	.000	.0003	.000	.105	.000

TABLE A3 Study 3: Summary of multiple regression results predicting negative affective reaction

		Reg 1: All conditions	Reg 2: No memento	Reg 3: Memento retain and gain
Psych. ownership (bottle)	*b*	0.105	0.140	0.255
	SE	0.068	0.130	0.107
	t	1.551	1.076	2.376
	p	.124	.289	.020
Psych. ownership (decal)	*b*			−0.255
	SE			0.106
	t			−2.392
	p			.019
Constant	*b*	1.880	1.915	2.106
	SE	0.281	0.566	0.324
	t	6.697	3.382	6.497
	p	.000	.002	.000

A.3 | Study 3 materials

In this survey, you will participate in a hypothetical marketplace transaction for some [university] memorabilia. **One participant in this room** will be randomly selected to have their decisions completed for real money and/or real objects, so please answer carefully and make sure your decisions reflect your real preferences.

Imagine that you have been randomly selected and this [university] water bottle [retain: and decal are] is/are yours to keep.

[no memento and gain: Take a few minutes to pick it up and feel what it's like to hold it and use it. Where will you keep it? What will you do with it?]

[retain: Take a few minutes to pick each of them up and feel what they are like to hold and use. Where will you keep the water bottle? What will you do with it? Where will you keep the decal? How will you use it?]

Continue to imagine that you have been randomly selected and that this university water bottle is automatically yours to keep. Now let's start the marketplace transaction. Remember, you may be randomly selected to have your decisions be completed for real. This is a real market!

In this marketplace transaction, you have the option of selling your [university] water bottle and receiving money for it instead.

[retain:] You may keep the university decal even if you end up selling the water bottle.

[gain:] You will receive a university decal (same as the one on your desk) regardless of whether you end up selling or keeping your water bottle.

For each of the prices listed below, please indicate whether you prefer to (1) receive this amount of money and sell your water bottle at this price or (2) not sell your water bottle at this price. After you have finished, one of the prices listed below will be selected at random and any exchanges will take place at that price. If you have indicated that you will sell at the randomly selected price, you will receive this amount of money and will give up the water bottle; if you have indicated that you will keep the water bottle at this price, then no exchange will be made and you can keep the water bottle

[retain:] Remember, the [university] decal is still yours to keep even if you end up selling the water bottle.

[gain:] Remember, you will receive the [university] decal regardless of whether you end up selling or keeping the water bottle.

Remember that you may be randomly selected to have these decisions be completed for real after completing the study.

Notice the following two things: (1) Your decision can have no effect on the price actually used because the price will be selected at random. (2) It is in your interest to indicate your true preferences at each of the possible prices listed below.

Exploratory process measures:

I feel a very high degree of personal ownership of this [university] water bottle.

I feel like I own this [university] water bottle.

I feel like this is my [university] water bottle.

I feel a very high degree of personal ownership of this [university] decal.

I feel like this is my [university] decal.

I feel like I own this [university] decal.

Imagine that the result of the marketplace transaction is that the water bottle is NOT yours to keep anymore.

To what extent would you feel each of the following emotions?

Rated on a 7-point scale ranging from 1 (not at all) to 7 (extremely).

Calm

Relaxed

Happy

Excited

Tense

Stressed

Sad

Depressed