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## Narratives and Valuations

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## Narratives and Valuations

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# Narratives and Valuations

## Abstract

While the significance of narrative thinking has been increasingly recognized by social scientists, very little empirical research has documented its consequences for economically significant outcomes. The current paper addresses this gap in one important domain: valuations. In three experiments, participants were given the opportunity to sell an item they owned (mug in Study 1, hat in studies 2 and 3) using an incentive-compatible procedure (multiple price list). Prior to making selling decisions, participants were randomly assigned to either a narrative treatment, in which they were asked to tell the story of their item, or a list treatment, in which they were asked to list the characteristics of their item. The narrative treatment led to significantly higher selling prices and increased rates of participants refusing all offered prices. We further explore potential mechanisms, and the impact of different types of narratives, by analyzing self-reported classifications of, and employing natural language processing techniques on, participants' narratives.

Keywords: decision-making, experimental, narratives, valuations, willingness to accept.

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*“Man is.. a teller of stories, he lives surrounded by his own stories and those of other people, he sees everything that happens to him in terms of these stories and he tries to live his life as if he were recounting it.”*

Jean-Paul Sartre, *The Words*, (New York: Braziller, 1964).

## 1. Introduction

A narrative, or a story, places selected events on a timeline and establishes causal links between them (Bruner, 1990; Pennington and Hastie, 1991). A narrative provides “structured higher-order mental representations summarizing causal, temporal, analogical, and valence structure” (Johnson et al., 2023, page 4). From Egyptian Hieroglyphics to newspapers and Tweets, narratives have been central to the creation of religion and culture and have played a key role in shaping popular opinions (Ganzevoort et al., 2013; Shiller, 2017). The human inclination to think in terms of narratives has been posited to promote efficient communication (Dautenhahn, 2002), aid in imagining counterfactuals of potential actions (Abbott, 2000), confer meaning to events by making them part of a whole (Polkinghorne, 1991), increase sense of control by providing explanations for events (Sarbin, 1986), and provide an approach to decision making in situations of ‘radical uncertainty’ by allowing an individual to simulate alternative futures that could result from different decisions (Johnson et al., 2023).

Despite widespread recognition of their importance, there has been a dearth of systematic research dealing with narratives, and that which has been done (reviewed below) has mainly focused on the impact of ‘narrative thinking’ on judgments – e.g., of juror judgments of defendants’ guilt or innocence (Pennington and Hastie, 1992), financial predictions (e.g., Johnson and Tuckett, 2022), the interpretations of events (e.g., Andre et al., 2022), or the effectiveness of attempts at persuasion (e.g., Slater and Rouner, 2002; Schwartzstein and Sunderam, 2021). The studies presented in this paper, in contrast, explore the effect of narrative thinking on *valuations* – of everyday objects. We report results from three experiments that examine participants’ Willingness To Accept (WTA) payment for giving up an object in their possession – either a coffee mug (Study 1), as in many prior studies examining psychological dimensions of valuation (Kahneman et al., 1990), or a hat (studies 2 and 3). Those items were chosen because they are common (most people own one), easy to ship (for online transactions), visible for field recruiting (hats), and are often acquired in ways that could form the basis of a narrative.

Participants in the online experiments (studies 1 and 2) were asked to identify and electronically provide a photograph of an item they owned without knowing the purpose of doing so. In the lab-in-the-field version (Study 3), that was replaced by recruiting people who were observed to be wearing a hat on campus. Then, participants were randomly assigned to either list (in bullet

form) the characteristics of the item (*list condition*), or to tell its story – e.g., how they came to possess it (*narrative condition*).<sup>1</sup> Finally, participants were offered the opportunity to sell their items to us. WTA (minimal selling price) was elicited using an incentive-compatible Multiple Price List (MPL). Unlike in many previous studies (discussed below), participants in our studies were not provided with any new information; they composed and reported their own narrative, which entailed organizing information they already possessed. We hypothesize, and find, that generating a narrative, compared with listing attributes, increases participants’ attachment to their items and raises their valuations. We also test alternative mechanisms for the narrative effect and find the most support for attention-based explanations. That is, generating a narrative shifts attention from more analytical considerations (e.g., profit and usage) to more holistic ones (e.g., people associated with the item).

### 1.1. Related research

**1.1.1. Psychology** Jerome Bruner was one of the main researchers in psychology to study and draw attention to the importance of narrative thinking. According to Bruner, “we organize our experience and our memory of human happenings mainly in the form of narrative-stories.. [which are] a version of reality whose acceptability is governed by convention and ‘narrative necessity’ rather than by empirical verification and logical requiredness” (Bruner, 1991, page 4). Bruner believed that such narratives not only shape how we make sense of our lives but – echoing a theme of Sartre’s opening quote – also how we live them: “In the end, we become the autobiographical narratives by which we ‘tell about’ our lives” (Bruner, 1987, page 15).

Pennington and Hastie’s “Story Model” (Pennington and Hastie, 1986) is the most rigorously researched work in psychology addressing the causal impact of narrative thinking. In a series of studies, they found that jurors reached verdicts by constructing causal stories, and that manipulating the ease with which such stories can be formed – e.g., by providing facts about events in a temporal order that naturally evoked a story – shifted research participants’ verdicts in directions consistent with the narratives they received or were encouraged to create (Pennington and Hastie, 1992).

**1.1.2. Marketing** With its focus on the determinants of purchasing, marketing has a natural interest in the valuation of objects, including topics such as brand-loyalty and brand-identification (Fournier, 1998; Alvarez and Fournier, 2016). Belk (1988), in an influential paper, argues that a variety of choice-related phenomena reflect the fact that people often treat possessions as extensions of themselves, which, one would naturally expect, should decrease willingness to part with such objects and increase selling prices. One factor that appears to influence whether people do treat

<sup>1</sup> Study 3 also included a control condition with no writing task.

possessions as extensions of themselves is whether people evaluate them in an analytical fashion, focusing on their attributes, or in a narrative fashion, thinking about associated events, such as how the object was acquired, as well as people associated with the object (e.g., if it was a gift). Marketers have found that narrative evaluations are more likely when an ad portrays a story, as opposed to presenting product attribute information (Chang, 2009). Chang (2019) summarizes the research on narrative advertising and argues that ads which provide narratives, as compared with those that provide information about products or logical arguments about why to purchase them, generate “more favorable cognitive responses, warm feelings, and positive ad and brand attitudes” (page 21), at least when cognitive capacity is sufficient.

The methodological approach taken in the current paper builds on experimental marketing studies that tested the effectiveness of storied ads. Research in this vein shows that people’s valuations of items are related to the extent to which an ad they are exposed to evokes a narrative. Adaval and Wyer Jr (1998), for example, asked participants to rate a prospective vacation after presenting them with either a brochure that sequenced the events that would occur in that vacation (story), or with an unorganized list including those same events. The brochure that evoked a story produced stronger reported intentions of going on the proposed vacation. Escalas (2007) randomized both the structure (narrative versus analytical) and the argument strength of a one-page running-shoe ad. She found that narratives had a positive impact on subsequent brand evaluations, and that argument strength did not have an impact in the narrative, but only in the analytical, condition.

Although the research reported in the current paper is related to the just-summarized research in marketing, our focus is on the impact of self-generated narratives on valuations of owned objects, as measured by selling prices. The focus of the marketing research is, in contrast, on the impact of narrative versus non-narrative (e.g., informational) persuasion methods on valuations (and evaluations more generally) of goods and services that are available for purchase. Another difference between prior research in marketing and the current research is that the former has examined the impact of fixed narratives embedded in advertisements, whereas we examine the impact of self-generated narratives. An exception is the work of Keller and McGill (McGill and Anand, 1989; Keller and McGill, 1994) who, though not casting their research as dealing with narratives, show that instructing consumers to explicitly imagine owning and using a product leads them to process information differently and weigh attributes differently than they would if they did not. For example, when they imagine using a product, consumers give more weight to attributes they can easily imagine (e.g., hardwood floors in an apartment) than to potentially more important attributes that they would have more difficulty imagining.

**1.1.3. Economics** Economists have been late arrivers to an appreciation of the importance of narratives. Existing, all-recent, economic work on narratives includes theoretical models (Bénabou et al., 2019; Eliaz and Spiegler, 2020; Akerlof et al., 2020), as well as case studies and stylized facts. Shiller (2017) shows that the frequency with which specific terms are used in popular discourse reveals “narrative epidemics.” Schwartzstein and Sunderam (2021) illustrate how technical analysis of stock data may lead to clashing conclusions (buy/sell) when viewed through the lenses of different common narratives (adopted causal models). While they focus on the persuasive capabilities of narratives, their analysis provides an example of how narratives may affect the valuations of assets given the same information. Michalopoulos and Xue (2021) study how cultural stories (folklore) relate to historical and present preferences (e.g., trust, risk aversion, and gender attitudes). Akerlof and Rayo (2020) present correlations between family narratives (measured through self-reported personal values in national surveys) and outcomes such as labor-force participation, income, and age at first marriage. Contemporary to this paper, several experiments conducted by economists have focused on the persuasion capabilities of narratives (Andre et al., 2022; Graeber et al., 2022; Alesina et al., 2023; Bursztyn et al., 2023); there are no causal studies in economics, to the best of our knowledge, addressing the role of naturally held narratives and narrative thinking on valuations.

**1.1.4. Decision Research** Two papers from the decision research literature are especially close to the current study. The first, by Loewenstein and Issacharoff (1994), presents studies testing for a phenomenon they termed “source dependence,” according to which the value placed on an object depends on the sequence of events that led to its acquisition. In the first of two studies, students with high grades on a classroom assignment received a coffee mug. A note they discovered in their mug informed them either that they had received the mug by chance or due to their grade. They were then given the opportunity to sell their mug. Those who thought they had received the mug due to their performance on the assignment specified higher selling prices to give it up. These studies were not only similar methodologically to those we report herein, but one could interpret the source-dependence manipulations as providing a more or less favorable narrative associated with the mug. However, unlike the current study, in which participants generated their own narratives, in those studies, the content of participants’ narratives was determined by the experiment. These results do not, therefore, illustrate the impact of narrative thinking per se, but of providing the basis for a particular, positive narrative.

The second line of research, by Johnson et al. (2007), tests the application of *query theory* to explain the WTP/WTB gap. Query theory posits that different types of decisions naturally elicit different “queries” – i.e., explicit considerations taken into account by decision-makers. Query theory explains differences in prices elicited by buying and selling preference elicitation modes as the

consequence of the order in which the elicitation mode induces decision makers to ask themselves questions such as “Why should I make the trade?” or “Why should I not make the trade?” The premise is that (1) these queries are executed serially, one after the other; (2) that the order in which they are asked differs across response modes; and (3) that the order has an impact on valuations (and specifically that the first query has great impacts on valuations than the second). In a series of studies, Johnson et al. (2007) test and find support for each of these predictions. This line of research is related to the current studies in that the difference between eliciting a narrative or a list might lead participants to self-generate a different set of queries. Unlike the studies reported in Johnson et al. (2007), however, our focus is exclusively on determinants of WTA, and our interest is in the impact of making the narratives associated with an object salient, rather than in the nature or ordering of queries about whether or not to buy or sell.

## 1.2. Potential Mechanisms

Several psychological mechanisms could potentially underlie the impact of narrative thinking on valuations. First, recounting a narrative about an object may shift sellers’ attention away from objective characteristics of the object (e.g., cost and usage) toward other types of considerations. These could include difficult-to-quantify attributes (e.g., the uniqueness of the object), complex interactions between attributes (e.g., design and comfort), and features that are specific to the relationship between the object and its owner – i.e., not inherent features of the object itself. One example of the latter would be identity-related object associations (LeBoeuf et al., 2010),<sup>2</sup> e.g., for a baseball fan, their team’s logo on a baseball hat.

Such a change of focus, from more objective, object-based, features to more qualitative features and idiosyncratic connections between the object and its owner, could potentially increase valuations (and UWS rates) for two reasons. First, it could bring into play value-enhancing considerations that, under an analytical evaluation of objective attributes, are unlikely to be considered. Most prominently, these considerations might include links between the object and people or experiences important to the owner.<sup>3</sup> Second, instead of merely adding value, these holistic considerations are also likely to be more difficult to quantify, thereby increasing the seller’s uncertainty about the correct valuation. Value uncertainty has been identified as a potential mechanism driving the endowment effect through increasing the share of sellers with extreme valuations (McGranaghan and Otto, 2022).

<sup>2</sup> LeBoeuf et al. (2010) show that when a particular identity is made more salient (e.g., scholar versus socialite), it systematically affects preferences over consumer products (e.g., pen versus candy)

<sup>3</sup> More formally, this could be captured by a standard Hedonic regression framework, where  $P$  is the minimal selling price and  $\mathbf{X}$  is a vector of  $n$  item attributes,  $P = \beta_0 + \sum_1^n \beta_i X_i + \epsilon$ . This mechanism would imply that the vector  $\beta$  is different under narrative thinking compared with analytical thinking.

An alternative mechanism is that the act of generating a narrative triggers immediate emotions that could produce a change in valuation. Put differently, the treatment effect might be the result of a change in participants' moods rather than their engagement in narrative thinking. However, in Study 3, we asked participants directly for their mood immediately after the MPL and found that it was not affected by the treatment nor correlated with WTA. Furthermore, in prior research, Lerner et al. (2004) shows that inductions of emotions (disgust and sadness in their studies) have a substantial effect on people's evaluations of objects. Their study addressed both buying and selling prices, whereas ours addressed only selling prices (because it is easier to construct a personal narrative for an object one owns compared with an object one could acquire). They found that both sadness and disgust lowered selling prices, which is inconsistent with our finding that sadder narratives, if anything, raise selling prices; for this and other reasons we discuss later, we think this is an unlikely causal mechanism for explaining our results.

Lastly, generating a narrative might affect the emotions people anticipate feeling contingent upon selling. A narrative often associates an object with people important to the seller. That might raise the prospect, if one were to sell the object, of feelings such as guilt arising from the idea that parting with the object for money represents a betrayal of those people. Similarly, composing and reporting a narrative might lead people to think about how future contact with the object might trigger memories, and the emotions associated with them, that would be less likely to occur if the object were sold. It is possible, for example, that in the study by Loewenstein and Issacharoff (1994), students who were unwilling to sell a mug associated with a high grade wanted to keep the mug around to remind them of their achievements periodically.

## 2. The Experiments

### 2.1. Overview

We conducted three (pre-registered) randomized experiments that were implemented on Qualtrics and distributed online (studies 1 and 2) and in-person (Study 3). In each of these studies, we manipulated how people were induced to think about an item they owned. We then measured their willingness to part with the item using an MPL procedure. Some randomly chosen participants were given the opportunity to sell their objects to us.<sup>4</sup> A major property of our design is that the evaluated object was self-selected. Online participants were asked to choose an item currently in their possessions and send us its photo before knowing what they would be asked to do with it.

<sup>4</sup> In Study 1 (Prolific), the instructions explicitly stated that one out of 25 participants would be chosen. Therefore, 19 participants were drawn, along with one of their decisions. Only three accepted the drawn MPL choice and shipped their mugs to us for payments of \$100, \$40, and \$35, respectively. In Study 2 (MTurk), participants were told that a random sample would be chosen (the exact number was not provided). The five randomly chosen participants rejected their drawn MPL choice. In Study 3 (field), a choice was drawn for all participants, and 17 hats were bought (sell prices ranged between \$5.5 and \$100 with an average of \$41).

In the field study, we recruited participants who spontaneously wore hats (i.e., participants chose hats to wear that day, not for the study).

Another related and unusual feature of the design is that participants in the narrative and list conditions, in effect, constructed their own stimuli: the list of attributes in the list condition and the narrative about the item in the narrative condition. Although having participants bring their items and generate their own texts introduces noise, it renders the design more naturalistic in the sense of involving real objects of value to the individual, as well as, presumably, exactly the types of narratives they would be likely to generate spontaneously for themselves. Moreover, these naturally occurring narratives can be used to examine the relationship between valuations and narrative types, potentially casting light on the mechanism(s) driving the impact of narratives on valuations. To that end, all participants self-reported several item classifications (after providing their WTA for the object). The use of already-owned objects and self-generated stimuli are two of the many features that differentiate the current study from Loewenstein and Issacharoff's study of source dependence.

Lastly, two of the most well-validated incentive-compatible mechanisms for eliciting WTA values are MPL and Becker–DeGroot–Marschak (1964), which are, in essence, discrete and continuous versions of the same mechanism.<sup>5</sup> A recent comparison of these procedures has concluded that both produce high levels of comprehension and optimal bidding (Burchardi et al., 2021). We opted for MPL, as it appeared more suitable for our settings. Its discrete and direct pricing choices were expected to address any strategic concerns participants may have and facilitate a straightforward lottery process (Andersen et al., 2006). On the other hand, BDM provides point identification, while MPL only identifies intervals. We narrow the intervals by using an extensive list of prices (up to 48). The list was automatically populated (above after ‘no’ and below after ‘yes’) for ease of use and to obtain a unique switching price as in BDM.<sup>6</sup> Another common element for both procedures is the existence of a maximal price (either in the price list or in BDM's support). To maintain a concise price list while still allowing for a high maximum price, we only displayed prices that are likely to be selected as switching points. This was achieved by gradually increasing the price intervals, e.g., starting with \$1 increments up to \$25, and then switching to \$5 increments up to \$50. The specific prices on the list varied across studies, but were always consistent across treatments within a study. The top price in Study 1's MPL was set to \$100, so it is above the market price of almost any mug while still being a credible and practical sum to pay in full. However, due to a

<sup>5</sup> Under the typical BDM procedure, participants first state their reservation price (WTA). Then, a number is chosen via lottery, and all lower bids are accepted.

<sup>6</sup> After the MPL, the implied switching price was verified using the following prompt: “You have said that you do not want to sell your hat for a price less than \$X, but you do want to sell it for \$X or higher. Is this correct? If yes, please proceed. If no, please go back and correct your responses.”

high share of participants declining all prices in Study 1, in Study 2, the top price was adjusted to \$300. In Study 3, it was lowered back to \$100, since we anticipated that the immediate cash payments and the lack of shipping would reduce selling prices.

Econometrically, refusing all prices means that the dependent variable is censored from above for these observations. Hence, excluding these participants (truncating) or top-coding their minimal selling prices as the maximal price on the MPL (censoring) would result in a downward bias, pushing the mean and variance estimates toward zero. Nevertheless, we present truncated regressions in column 2 of Tables 1-3 to show the effect on sellers only (intensive margin) and censored estimates in Figure 1 as an intuitive WTA measure. However, to obtain unbiased and consistent estimates, we take a latent variable approach and estimate a Tobit model. The Tobit marginal treatment effect would capture the change in observed selling prices for participants below the limit (i.e., WTA less than \$100 in studies 1 and 3, and \$300 in Study 2), weighted by the probability to sell, combined with the change in the probability of selling due to the treatment.

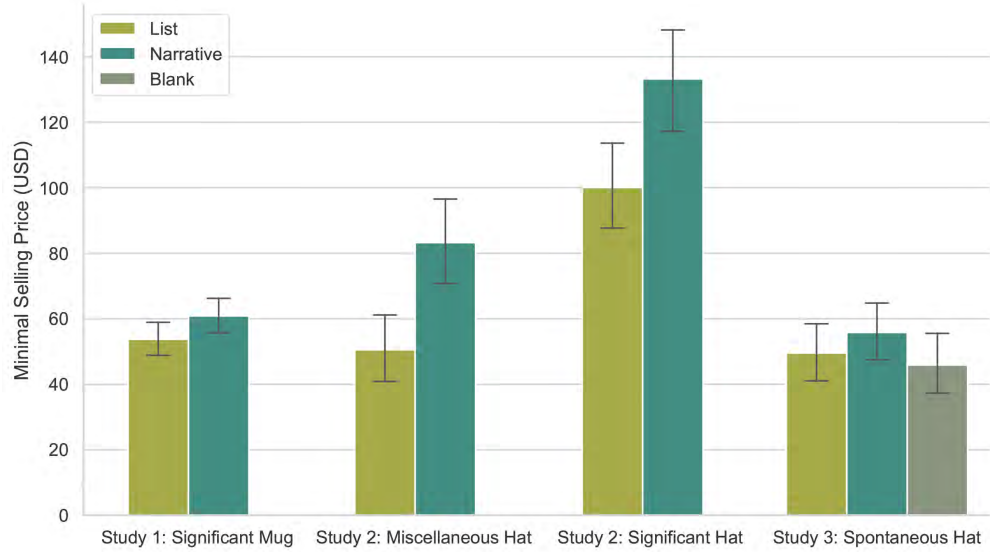
Figures 1 and 2 preview the results of the three studies. First, Figure 1 presents mean WTAs in all experimental conditions, top-coding those who refused all offered prices as if they agreed to the maximum price on the MPL. Second, Figure 2 provides a detailed account of the differences in minimal selling prices between groups by plotting their Cumulative Distribution Functions (CDF). We discuss each panel of these figures below under the corresponding study subsection.

## 2.2. Study 1

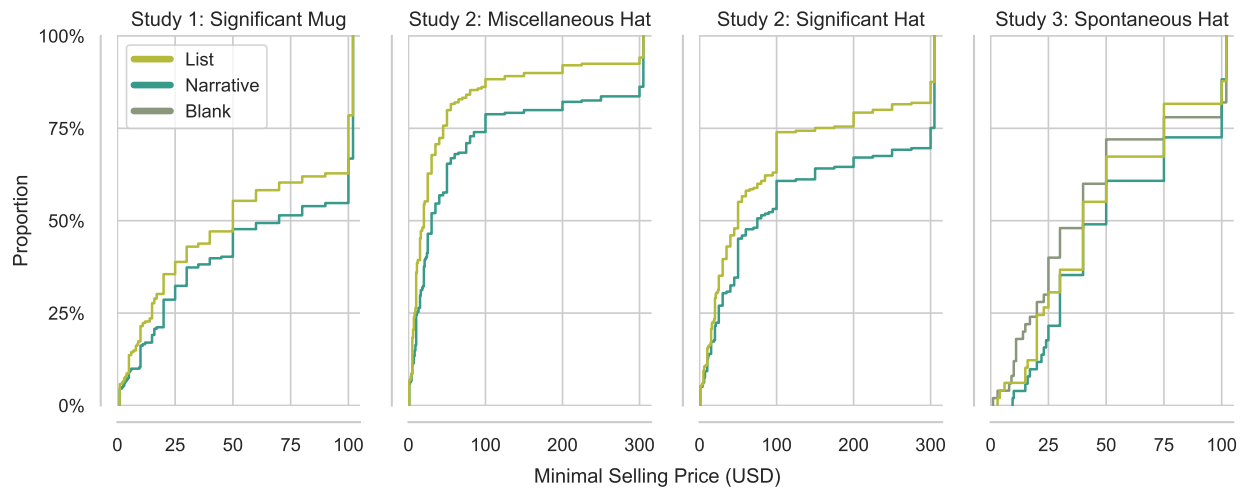
Study 1 was distributed on Prolific. The item we asked participants to select from their possessions in this study was a personally significant mug, and they were later offered up to \$100 for it.

**2.2.1. Participants** Four hundred eighty-three Prolific workers, recruited under US census representative sample quotas (using a designated feature on Prolific), completed Study 1. Demographics per group are shown in the Appendix (Table A1). In total, 14 out of the 483 participants were deemed invalid (2.9% of the sample). First, 12 did not supply a valid (authentic) picture. As a result, they did not commit to selling us a mug they owned and valued. Second, looking at the text responses, we define invalid responses as either a copy-paste of the question, unrelated to the item, or nonsense words. Participants with such responses are unlikely to have been affected by the manipulation. There were three invalid text responses, one of which was written by a participant who did not supply a valid image. All participants received a fixed wage of \$2.5, but only valid responses were granted a \$0.5 bonus and took part in the lottery of binding decisions. We randomly selected participants with valid responses to have one of their decisions count through a lottery. The lottery results were communicated through Prolific's bonus systems. Participants who accepted the chosen decision (i.e., it was above their switching price) were sent a pre-paid shipping label and received their additional payment when their mug was received in the mail.



**Figure 1** Minimal Selling Prices (Censored) by Experimental Condition.

*Note.* Mean MPL switching prices in USD per group. Participants who refused all offered prices are top-coded as if they agreed to the maximal price on the MPL (\$100 in Studies 1 and 3, and \$300 in Study 2). 95% bootstrapped confidence intervals in black. For Study 1 (significant mug),  $N_{List} = 234$  and  $N_{Narrative} = 235$ . For Study 2, under the significant hat condition:  $N_{List} = 234$  and  $N_{Narrative} = 213$ , and under the miscellaneous hat condition:  $N_{List} = 222$  and  $N_{Narrative} = 245$ . For Study 3 (spontaneous hat),  $N_{List} = 47$ ,  $N_{Narrative} = 50$ , and  $N_{Blank} = 49$ .

**Figure 2** Minimal Selling Prices CDF by Experimental Condition.

*Note.* The mass points beyond \$100 for studies 1 and 3 and beyond \$300 for Study 2 represent participants who refused all prices. For Study 1,  $N_{List} = 234$  and  $N_{Narrative} = 235$ . For Study 2, under the significant hat condition:  $N_{List} = 234$  and  $N_{Narrative} = 213$ , and under the miscellaneous hat condition:  $N_{List} = 222$  and  $N_{Narrative} = 245$ . For Study 3,  $N_{List} = 47$ ,  $N_{Narrative} = 50$ , and  $N_{Blank} = 49$ .

**2.2.2. Procedure** After consent was given, participants were asked to verify that they were at home and had access to a smartphone. Then, after supplying demographic information, participants took a picture of a personally significant mug they owned. Note that participants chose the mug without knowing they would be given the opportunity to sell it, so they had no incentive to manipulate their choice. Moreover, participants could not go back after submitting their pictures. Next, participants were randomly assigned to either the narrative or list treatment, with text entry instructions as follows: “Please tell the story of your mug (in the picture above) - e.g., how you came to own it” (narrative condition) or “Please list the characteristics of the mug (in the picture above)” (list condition). Participants were then told they had the opportunity to sell their mug to the experimenters, were given instructions about the MPL mechanism, and answered three questions verifying their understanding of the terms of the transaction (i.e., the lottery of binding decisions, further payment, and shipping). Participants made 40 yes or no choices in an MPL ranging from \$1 to \$100, knowing that each of those might bind. The MPL was automatically populated such that participants could not have more than one switching price, which was interpreted as their WTA. If all prices were refused, participants were asked (unincentivized) to state their minimum selling price. They had the option to “not sell at all” by filling ‘9999’ in that follow-up question. The final section of the survey featured 12 questions regarding the mug (would they trade it for a new identical one, how they came to possess it, and more). Screenshots are presented in the appendix.

**2.2.3. Main Results** One hundred and twenty-nine of 469 participants, 77/235 (33%) from the narrative condition and 52/234 (22%) from the list condition, were unwilling to sell (henceforth, UWS) their mug for any price included on the MPL (i.e.,  $WTA > \$100$ ). That represents a 10.6 percentage points (47.7%) extensive margin treatment effect, displayed via a Logit regression in column 1 of Table 1. Responding to an unincentivized follow-up question, 86% of the UWS participants explicitly stated that they would not sell for any price. Another 6% stated their minimum selling price was \$1000 or more, and the remaining 8% asked for \$100-1000.

Excluding participants who refused all prices (truncated sample), column 2 of Table 1 shows no difference in mean WTA across treatments (i.e., no intensive margin effect). Turning to the full sample, albeit with top-coded WTA values (at \$100), Figure 1 displays a weak narrative treatment effect of \$6.5. Finally, column 3 of Table 1 provides unbiased estimates of the overall narrative effect using a Tobit specification. It shows an increase of \$10.46 (17.1%) in minimal selling prices, driven mostly by the extensive margin. Beyond the average effects, the LHS of Figure 2 visualizes the distribution of minimal selling prices for each treatment. It shows that the two groups were almost equally likely to populate the lower end of the distribution, but the gap between the curves develops around \$35, as more list group participants start accepting these higher prices while their narrative group counterparts keep rejecting all prices.

**Table 1** Narrative Effect on Minimal Selling Prices (Study 1).

Variables	(1) Logit: Non-Sellers	(2) OLS: Sellers' WTA	(3) Tobit: WTA
Narrative	0.106** (0.041)	0.512 (3.643)	10.46** (4.912)
Constant	0.222*** (0.027)	41.58*** (2.629)	61.13*** (3.431)
Observations	469	340	469

*Note.* Robust standard errors in parentheses. The constant represents the List condition. Column 1 shows the baseline probability (constant) and marginal effects (dy/dx) at the mean from a Logit regression in which the DV is an indicator for refusing all prices. Column 2 shows the mean selling price (constant) and marginal effects from OLS regressions in which the DV is WTA, and participants who refused all prices are excluded. Column 3 shows the mean selling price (constant) and marginal effects from Tobit regressions (accounting for truncation) in which the DV is WTA, and participants who refused all prices are included. \*\*\*p<0.01, \*\*p<0.05, \*p<0.1.

### 2.3. Study 2

Study 2 was conducted for two main reasons. The first was to reduce the share of participants refusing all prices (i.e., have more intensive margin action). For that, the maximal offered price was tripled (from \$100 to \$300). The second reason was to test the narrative effect on a different type of item. In this study, the item was a hat, and we manipulated the personal significance of the chosen hat by giving participants instructions about the nature of the hat we wanted them to select from their possessions. We asked for a “miscellaneous” hat in the low significance condition and for a “personally significant hat” in the higher significance condition. Finally, this study was distributed on a different subject pool – Amazon’s Mechanical Turk (MTurk).

**2.3.1. Participants** One thousand and ten MTurk workers above 18 years old, with more than 50 works completed, approval rate higher than 90%, and located in the US, completed Study 2. Demographics per group are shown in the Appendix (Table A1). In total, 96 of the 1,010 participants were deemed invalid (9.5% of the sample). First, 94 participants did not supply a valid picture. Second, there were 43 low-quality text responses; most (41) were written by participants who did not supply a valid image. All participants received a fixed wage of \$2.5, but only valid responses were granted a \$0.5 bonus and took part in the lottery of binding decisions. We randomly selected participants with valid responses to have one of their decisions count through a lottery. The lottery results were communicated through MTurk’s bonus systems.

**2.3.2. Procedure** After consent was given, participants were asked to verify that they were at home and had access to a smartphone. Then, after supplying demographic information, participants took a picture of a hat they owned – either significant or miscellaneous, depending on the randomized experimental condition. Next, participants were randomly assigned to either the narrative or list treatment, with text entry instructions as follows: “Please tell the story that explains

what about the hat (in the picture above) makes it personally significant for you - e.g., how you came to possess it.” (narrative condition) or “Please list the characteristics of the hat (in the picture above).” (list condition). Participants were then told they had the opportunity to sell their item to the experimenters, were given instructions about the MPL mechanism, and answered two questions verifying their understanding of the terms of the transaction. Participants made 48 yes or no choices in an MPL ranging from \$1 to \$300, knowing that each of those might bind. The final section of the survey featured 12 questions regarding the item (as in Study 1).

**2.3.3. Main Results** In this study as a whole, 138 out of 914 participants, 94/458 (21%) from the narrative condition and 44/456 (10%) from the list treatment, were UWS (i.e.,  $WTA > \$300$ ). Under the miscellaneous hat condition, column 1 of the top panel of Table 2 shows a 9.7 percentage points extensive margin narrative effect over a baseline of 5.4% non-sellers in the list treatment. Similarly, under the significant hat condition, 13.7% of participants in the list condition refused all prices, while that share was 12.9 percentage points higher in the narrative condition. Responding to an unincentivized question, 88% of the UWS participants stated that they were unwilling to sell at all, another 7% asked for \$1000 or more, and only 5% stated amounts in the range of \$300-1000.

<b>Table 2 Narrative Effect on Minimal Selling Prices (Study 2).</b>			
Variables	(1) Logit: Non-Sellers	(2) OLS: Sellers' WTA	(3) Tobit: WTA
<i>Miscellaneous Hat</i>			
Narrative	0.097*** (0.0267)	16.83*** (5.878)	44.12*** (9.770)
Constant	0.054*** (0.015)	35.08*** (3.542)	51.31*** (5.792)
Observations	467	418	467
<i>Significant Hat</i>			
Narrative	0.129*** (0.0367)	10.33 (9.052)	47.78*** (13.60)
Constant	0.137*** (0.0225)	74.95*** (5.791)	114.6*** (8.731)
Observations	447	358	447

*Note.* Robust standard errors in parentheses. The constant represents the List condition. Column 1 shows the baseline probability (constant) and marginal effects (dy/dx) at the mean from a Logit regression in which the DV is an indicator for refusing all prices. Column 2 shows the mean selling price (constant) and marginal effects from OLS regressions in which the DV is WTA, and participants who refused all prices are excluded. Column 3 shows the mean selling price (constant) and marginal effects from Tobit regressions (accounting for truncation) in which the DV is WTA, and participants who refused all prices are included. \*\*\*p<0.01, \*\*p<0.05, \*p<0.1.

In contrast to Study 1, column 2 of the miscellaneous (top) panel of Table 2 shows that the narrative treatment had a substantial intensive margin effect of \$16.83. The bottom panel (significant

hat) shows a \$10.33, non-significant effect. A likely reason for the difference between studies 1 and 2 in the narrative effect on the intensive margin is the extended MPL, which increased the scope of the intensive margin and decreased UWS rates.

To determine whether the narrative manipulation had a different impact on valuations of the miscellaneous and significant hats, a pooled regression combining the miscellaneous and significant hat samples was conducted (Table A3), which included a Narrative\*Significance interaction term. There was a large and statistically significant difference in baseline valuations between personally significant and miscellaneous hats. Specifically, both the share of non-sellers and WTA values were about twice as large for significant hats compared with miscellaneous ones. However, the size of the narrative effect was stable across these two types of hats (according to the non-significant interaction term). Finally, column 3 of Table 2 displays unbiased estimates of the overall narrative treatment effect. The effect is very similar across the two types of hats (approximately \$45) and is about 4 times larger than the one identified in Study 1. As can be seen in the middle panel of Figure 2, the differences between the distribution of WTA values across treatments start forming around \$30 and get increasingly wider after the \$50 and \$100 offers (which list group participants are more likely to accept).

We had expected an interaction between the narrative and significance treatments, whereby the effect of generating a narrative would be greater for significant items (because we anticipated that they would be associated with richer narratives). After observing a null result, however, we speculate that more significant items may have led to a greater fraction of *spontaneous* narrative thinking in the list condition (since choosing a significant item involves recollecting its narrative), limiting the impact of explicit instructions to generate a narrative. Another possible explanation for why the narrative effect was not larger for significant versus miscellaneous hats is a ceiling effect. The mean WTA in the significant hat condition under the list treatment was \$100 (when top-coding UWS participants as in Figure 1), limiting the scope for an additional increase due to the narrative treatment.

## 2.4. Study 3

Finally, we conducted a lab-in-the-field version to alleviate online-specific features (e.g., shipping), strengthen the incentives (i.e., a binding decision for each participant and immediate transactions), and gather more refined mechanism-related evidence (via new direct self-reported questions). It also included a new treatment with no list or narrative, which was added to test whether the narrative was boosting valuations, as we predicted, or rather, contrary to our prediction, the listing of the item's attributes might be suppressing selling prices. For this study, we recruited participants spontaneously wearing a hat on campus. Due to the nature of the recruitment process, there were no instructions regarding which hats to choose.

**2.4.1. Participants** One hundred and fifty-three individuals who were observed to be wearing a hat were recruited on the campuses of Carnegie Mellon University and the University of Pittsburgh. Demographics per group are shown in the Appendix (Table A2). Seven (4.6%) responses were excluded, three for leaving before the participation payment, and another four for leaving before the lottery of the binding decision (i.e., their MPL was not incentivized).<sup>7</sup> All participants received a fixed participation payment of \$3, and had one of their sell/don't sell choices randomly selected for execution. The participation payment (plus the sale price if a transaction occurred) was paid in cash immediately following survey completion. If the hat ended up being sold, the researcher took possession of it.

Note that we originally planned for double the amount of participants (300). However, due to logistical reasons, we decided to settle for 150, knowing that the study might be somewhat underpowered. The main reason for settling for the lower number of participants was the concern that students would learn about our study and strategically take advantage of it by selling hats they wanted to get rid of, which would render our treatment irrelevant. To avoid that, we recruited participants on the spot (instead of sending invitations to a subject pool) and condensed our recruiting efforts into two weeks. During these two weeks, each session (2-5 hours with approximately 10-30 participants) was held in a different location and time. That also contributed to the diversity of our sample (i.e., representation of two universities and many schools and departments).

For a power analysis, based on Study 1 (which had the same maximum value on the MPL), we anticipated a \$10.46 difference between the Narrative and List groups and a standard deviation of \$32.37, which means a Cohen's *d* of 0.32. Therefore, our power to detect an effect with 90% (95%) significance has decreased from 73% (62%) to 48% (35%). While underpowered to detect treatment effects in WTA (note that in our settings, there is an exceptionally large variance in WTA values due to the variance in hats), the main purpose of this study was to complement the previous studies by collecting mechanism evidence (which vary less with hat types and hence are easier to identify) and alleviating procedural concerns of the online studies (e.g., the effect of shipping and sell probability on baseline selling prices).

**2.4.2. Procedure** Research assistants blind to the research question and experimental conditions approached people wearing a hat on campus with the following question: "would you be interested in taking a short academic survey regarding hats?" Interested participants were then led to a classroom with laptop stations that administered the Qualtrics survey. To ensure participants were not expecting to sell their hats (i.e., learned about the study in advance), we asked at the

<sup>7</sup> Including these subjects doesn't qualitatively affect the results, and they are presented in Table A3.

end of the survey for their reason for wearing that specific hat today (multiple choice question). No one indicated that they knew they might be able to sell it.

The survey began with participants giving consent and answering a (shortened) demographic section before proceeding to the randomized manipulation block. There were three treatment arms: narrative (“Please tell the story of your hat (the one you are currently wearing) - e.g., how you came to own it.”), list (“Please list the characteristics of your hat (the one you are currently wearing).”), and blank (neither narrative nor list elicited). Participants were then told they had the opportunity to sell their hats to the experimenters, were given instructions about the MPL mechanism, and answered three questions verifying their understanding of the terms of the transaction. Next, participants made 40 yes or no choices in an MPL ranging from \$1 to \$100 (as in Study 1), knowing that each of those decisions might be executed. After the MPL, participants were asked to call over the experimenter, who noted their switching price (for the lottery). They then continued to the last section of the survey, which comprised 15 questions about the participant’s thoughts and feelings, as well as details about the hat (e.g., its original cost). Screenshots are presented in the Appendix. Finally, the MPL lottery took place in front of each participant (before the participation fee payment) using an online spin-the-wheel random number generator with numbers corresponding to the 40 MPL decisions. If the draw was above the switching price, the transaction occurred on the spot – participants were given cash and handed over their hats.

**2.4.3. Main Results** In Study 3, 19 out of 146, 6/50 (12%) from the narrative condition, 5/47 (11%) from the list condition, and 8/49 (16%) from the blank condition, were UWS (i.e.,  $WTA > \$100$ ). That can be seen in column 1 of Table 3 where no statistically significant differences are identified between any of the treatments (estimates in the table are slightly different from above due to the inclusion of session indicators in the regressions). As in the previous studies, 85% of the UWS participants stated that they were unwilling to sell at all, and the remaining three stated amounts in the range of \$100-300. Since this study was designed to explore the mechanism, its small sample size and the inherently high variance in items and narratives limit its power to identify an effect (especially for the relatively rare event of refusing all prices). Moreover, compared to the online studies, in which participants had several days to ship their items (enough time to arrange a replacement), in this study, participants were asked to sell an item they were currently using. Thus, willingness to sell in the current study was potentially dominated by utilitarian considerations (e.g., protection from the cold winter).

Despite its low statistical power compared to the two prior studies, column 2 of Table 3 displays an intensive margin narrative effect of \$15.85 and a weak list treatment effect of \$7.1 ( $p = .194$ ), compared to the blank treatment. This shows that the difference between the list and narrative

**Table 3** Narrative Effect on Minimal Selling Prices (Study 3).

Variables	(1) Logit: Non-Sellers	(2) OLS: Sellers' WTA	(3) Tobit: WTA
Narrative	-0.039 (0.072)	15.85*** (5.979)	10.88 (7.385)
List	-0.053 (0.075)	7.146 (5.477)	2.606 (7.316)
Constant	0.174*** (0.058)	32.71*** (5.873)	49.24*** (8.689)
Observations	131	127	146

*Note.* Robust standard errors in parentheses. The constant represents the Blank condition. Column 1 shows the baseline probability (constant) and marginal effects (dy/dx) at the mean from a Logit regression in which the DV is an indicator for refusing all prices. Column 2 shows the mean selling price (constant) and marginal effects from OLS regressions in which the DV is WTA, and participants who refused all prices are excluded. Column 3 shows the mean selling price (constant) and marginal effects from Tobit regressions (accounting for truncation) in which the DV is WTA, and participants who refused all prices are included. Regressions include six session indicators. One session hosted 15 sellers and zero non-sellers, and therefore, its Logit indicator caused their omission (perfect prediction). \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

valuations in prior studies was very unlikely to have been caused by the list condition dragging down selling prices (as opposed to the narrative condition raising them). As in the prior studies, we also conducted t-tests to test for differences between the narrative and list treatments. The narrative treatment had a non-statistically significant positive impact of \$8.7 (21.8%) above the list treatment ( $p = .151$ ).

Next, in column 3 of Table 3, the Tobit specification shows somewhat smaller effects due to the extensive margin patterns discussed above ( $p = .143$  for narrative and  $p = .722$  for list). Again, the narrative treatment had a non-statistically significant positive impact of \$8.3 above the list treatment ( $p = .240$ ). While not statistically significant, notice that the effect size is highly similar to the one identified in Study 1, albeit with one-fifth of the sample size (approximately 250 participants per treatment in Study 1, compared to 50 in Study 3).

In addition, looking at the underlying distribution, the RHS of Figure 2 shows that, unlike the previous studies in which the gaps between the CDF curves become larger as prices increase, here the gaps remain constant. This pattern indicates that the treatment effect in this study is driven by a lower likelihood of narrative group participants accepting low prices (below \$20). Similarly, Table A4 replicates columns 2 and 3 of Table 1-3 with a logged dependent variable, which accounts for diminishing marginal utility by giving less weight to the high WTA values. It displays somewhat larger and more significant narrative effect estimates across all studies.

### 3. Mechanism Analysis

Consistent with our central prediction, we find that, across all three studies, WTA values were higher under the narrative treatments than under the list treatment. Pooled across the three



studies, the share of participants refusing all prices in the narrative condition was 75% higher than in the list condition (23.8% vs 13.7%), reflecting the extensive margin of the narrative effect on valuations. We did not find such a gap in Study 3, in part due to low power, and in part due to the utilitarian considerations (e.g., cold) associated with selling on the spot. A similar result shows up for the intensive margin: selling prices among sellers. Across the four items, sellers (participants who accepted at least one price) in the narrative conditions had 16% higher valuations than sellers in the list conditions (\$58.2 versus \$50.0). However, there was no such effect in Study 1, in which there was a very high share of non-sellers under the narrative treatment. Aggregating both margins in a censored fashion (like Figure 1), there is a 36% narrative effect on minimal selling prices (\$93.4 vs. \$68.8 in the list condition). That gap is significantly larger in Study 2, potentially mechanically due to the tripled maximal MPL price.

Although the minimal selling prices may seem surprisingly high, note that participants had not planned on selling these items, and, in the online studies, the shipping process would require some effort as well. The fact that baseline prices remained high in Study 3 (where a decision was executed for each participant and entailed very low transaction costs), however, validates that these levels reflect truthful valuations.

In the current section, we pool data from the three studies to examine the impact of different types of narratives on minimal selling prices, with the goal of shedding light on the mechanisms (discussed earlier) potentially underlying the treatment effect. For that, we analyze participants' narrative texts (in the narrative conditions) as well as all participants' responses to a questionnaire administered right after the MPL (positioned there to avoid these questions influencing our key dependent variable).<sup>8</sup> Specifically, the follow-up questionnaire asked participants to recall (or guess) the cost of their item, ownership length (in years), whether it was custom-made (binary), occupation-related (binary), related to another person (binary), used often (binary), what type of experience made it personally significant (categorical), and how they came to possess it (categorical). In Study 3, we asked three additional questions (described below) about their current mood, the intensity of their emotional connection to the item, and the considerations that affected their selling price decisions. Finally, due to the different MPLs across studies, we top-code UWS participants (as in Figure 1) and standardize selling prices per each of the four items (i.e., subtract the mean and divide by the standard deviation of the selling prices in each study separately).

Appendix Table A5 displays descriptive statistics for these self-reported variables. For the categorical and binary variables, the table shows the share of participants choosing each category. For

<sup>8</sup> While the text analysis can only be meaningfully pursued for the narrative group, it has the benefit of analyzing participants' responses that were written before they learned about the opportunity to sell the item, whereas the self-reported classifications could potentially be affected by the selling procedure.

Study 2 (where the request for a significant or a miscellaneous hat was randomized), Chi-Square tests are reported for the relationship between these variables and the item's type. It shows that personally significant hats (compared to miscellaneous ones) are more likely to be inherited, related to another person, used often, and have positive related experiences. Conversely, they are less likely to be self-purchased and have no related experience. Also, participants reported higher costs and longer ownership for the significant hats than the miscellaneous ones.

### 3.1. Self-Reported Item Classifications

Table 4 examines the link between WTA values and self-reported item attributes, like ownership duration, that are anticipated to be unchanged by the treatment.<sup>9</sup> For that, we pool all three studies to analyze how these item classifications impact WTA generally (e.g., items that are owned longer carry a premium regardless of the treatment) and whether their impact varies depending on the treatment. If a feature's impact interacts with the treatment, that may provide suggestive mechanism evidence. For example, if item associations with other people impact WTA only under the narrative treatment, that might imply that the narrative treatment shifted participants' focus to that item attribute, thereby increasing its coefficient.

First, column 1 includes only the narrative treatment indicator (blank and list treatments are combined as the omitted group) and indicators for item types (coefficients not reported). It shows that minimum selling prices were 0.301 standard deviations higher in the narrative condition. The Blank treatment, which appeared only in Study 3, reduced average WTA values by 0.0806 standard deviations compared to the list treatment, but we pooled these two groups for the analysis of Table 4. These treatment effects remained relatively stable across all specifications (i.e., they are robust to the inclusion of any item classification).

Column 2 examines the impact of different ways of coming to possess an item. Compared to self-purchasing, receiving it as a gift, inheritance, or self-making it, are associated with higher valuations. In addition, we tested whether any of these patterns are affected by the experimental condition by interacting every classification with the narrative treatment indicator, but do not report these analyses because of space constraints. None of these possession indicators had a significant interaction with the narrative treatment. This suggests that the way by which participants came to possess their item does not moderate whatever mechanisms underlie the narrative effect.

Column 3 compares having a positive associated experience with the item to having mixed, negative, or no experience. Notice that about 80% of participants reported a positive experience

<sup>9</sup> There were three statistically (95%) and economically (larger than five percentage points) significant differences between the treatment groups across the 17 variables used in Table 4. Under the narrative condition, ten percentage points more items were reported as gifts, eight percentage points less were self-purchased, and seven percentage points more were related to another person.

**Table 4 Self-Reported Item Classifications and Minimal Selling Prices (Studies 1-3).**

Variables	(1)	(2)	(3)	(4)	(5)
Narrative	0.298** (0.064)	0.265** (0.058)	0.263** (0.055)	0.266*** (0.045)	0.238** (0.044)
Possess-Gift		0.394** (0.072)			0.170 (0.111)
Possess-Inherit		0.475** (0.136)			0.199 (0.118)
Possess-Prize		-0.013 (0.337)			-0.014 (0.279)
Possess-Self-Made		0.826** (0.182)			0.638** (0.165)
Possess-Souvenir		0.389* (0.148)			0.246 (0.175)
Possess-NA		0.203** (0.062)			0.150*** (0.019)
Experience-NA			-0.461*** (0.040)		-0.311*** (0.041)
Experience-Negative			0.321 (0.296)		0.205 (0.189)
Experience-Mixed			0.151 (0.144)		0.0669 (0.107)
Career-related				-0.097 (0.095)	-0.141 (0.101)
Person-related				0.461*** (0.061)	0.360* (0.116)
Custom Made				0.206** (0.061)	0.173* (0.069)
Used Often				0.014 (0.095)	0.007 (0.082)
Ownership years				0.020*** (0.003)	0.019** (0.003)
Cost Proxy				0.012*** (0.001)	0.011*** (0.001)
Constant	-0.135** (0.032)	-0.395*** (0.043)	-0.128** (0.031)	-0.701** (0.141)	-0.734*** (0.094)
Observations	1,529	1,529	1,529	1,529	1,529
$R^2$	0.023	0.063	0.041	0.126	0.143

*Note.* Standard errors clustered by item in parentheses. Indicators for the four different items are not reported but are included in all regressions. The DV is censored minimal selling price (i.e., refusing all prices is coded as accepting the maximal price), standardized per item (subtract mean and divide by STD). All covariates are binary except for cost proxy and ownership years. The List and Blank conditions, Possess Self-Purchased, and Experience Positive are the omitted categories. Classifications were self-reported. Participants who could not recall the cost and ownership length were assigned the sample average (per study) to avoid exclusions. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

and 10% a mixed experience (Table A5). The results show that having an experience, regardless of the valence, is associated with higher valuations compared to having no experience. Furthermore, the interaction model (not reported) reveals that the insignificant effect for mixed experience masks a null effect under the list treatment (baseline:  $\beta = -.041, p = .776$ ) and a significant positive interaction with the narrative treatment (interaction:  $\beta = .333, p = .009$ ). Thus, mood-based explanations (e.g., being reminded of a happy experience) seem less likely since positive experiences are associated with, if anything, lower valuations compared to negative and mixed experiences.

Column 4 inspects the binary and continuous item attributes. Items related to other persons (e.g., given by a family member), custom-made, owned for a longer time, and more expensive are associated with higher valuations. In contrast, items related to one's occupation and those that are used often (perhaps because they tend to be more mundane) have no impact. Moreover, the interaction model (not reported) shows that used-often items have a non-significant positive association with valuations under the list treatment (baseline:  $\beta = .137, p = .400$ ) but have a somewhat more negative association under the narrative treatment (interaction:  $\beta = -.247, p = .078$ ). Similarly, the original cost of the item has a larger impact on valuations under the list treatment (baseline:  $\beta = .013, p = .005$ ) than it does under the narrative treatment (interaction:  $\beta = -.003, p = .005$ ). These findings lend support to attention-based mechanisms, whereby the list treatment increases the weights assigned to more analytical considerations such as usage and objective cost.

Finally, column 5 displays a kitchen sink specification. It shows that a lot of the variance that was explained by possession methods (gift, inherit, souvenir) is now captured by other variables (such as associations with other people), while the effects of custom- and self-made items remain. These self-reported attributes are able to explain 14.3% of the variance in minimal selling prices. That  $R^2$  is stable across treatments (i.e., when running specification 5 for each treatment group separately). The interaction model (once again not reported) reveals several patterns: All else equal, items that are used often have a weak positive effect under list but a more negative effect under narrative (baseline:  $\beta = .113, p = .437$ ; interaction:  $\beta = -.241, p = .075$ ). Gifts have a positive effect under list but none under narrative treatment (baseline:  $\beta = .319, p = .006$ ; interaction:  $\beta = -.340, p = .070$ ). Self-made items and items related to other people have a larger positive effect under narrative treatment (Self-made baseline:  $\beta = .544, p = .111$ ; interaction:  $\beta = .796, p = .084$ . Person-Related baseline:  $\beta = .230, p = .040$ ; interaction:  $\beta = .277, p = .068$ ). Having a mixed associated experience has a weak negative effect under list but a more positive effect under narrative (baseline:  $\beta = -.123, p = .186$ ; interaction:  $\beta = .356, p = .066$ ). Finally, having no associated experience has a larger negative effect under narrative treatment (baseline:  $\beta = -.265, p = .005$ ; interaction:  $\beta = -.220, p = .066$ ).

Although none of these results provides definitive evidence concerning the mechanism driving the narrative effect, the changes in some attributes' coefficients seem to provide circumstantial support for a salient-attributes mechanism, in which generating a narrative shifts the focus from practical considerations (e.g., usage and market price) to more associative ones (e.g., experiences and people). On the other hand, the large narrative effect across all columns (in the interacted models, it ranged between 0.255 and 0.552, all statistically significant) indicates that a sizable share of the treatment effect on selling prices is not sensitive to item characteristics. That would be consistent with both a greater value uncertainty account and an anticipated emotions account, under which crafting a narrative tends to enhance the perceived meaningfulness of an item (see, e.g., Ariely et al., 2008), decreasing the willingness to depart from it.

In Study 3, three questions were added aiming to quantify potential mediators of the narrative effect, i.e., variables that might be affected by the treatment (unlike the objective item features discussed above). Specifically, immediately after the MPL, participants reported their mood ("very negative" to "very positive"), the intensity of their emotional connection to their hat (from "no connection at all" to "very strong connection"), and the influence of eight considerations (see Table A5) on their selling decisions (responses from "no influence" to "extremely important influence"). The numerical values for all these questions ranged between 0-10, and we normalized the eight considerations to sum to 1 for each participant (i.e., transformed to shares). Also, in the following analysis, all of the variables above were standardized to have a mean of zero and a standard deviation of one for easier interpretation.

Table 5 presents a mediation analysis testing the pathways through which the narrative effect operates (following Imai et al., 2010). First, in the top panel, we estimate the impact of the treatment on the mediator (e.g., the treatment effect on mood). Second, in the middle panel, we test the association between the mediator and minimal selling prices while controlling for the treatment (e.g., the impact of mood on WTA beyond the treatment effect). Third, in the bottom panel, simulations are performed to estimate the Average Causal Mediation Effect (ACME) divided by the total narrative treatment effect (along with its 95% confidence interval). For reference, the total narrative effect under this censored specification is \$9.39 ( $p = .094$ ).

Mediation effects are traditionally estimated using the product of coefficients method,<sup>10</sup> but the simulations approach provides more reliable confidence intervals (Imai et al., 2010). We present the share of the mediated effect out of the total effect. That number might be negative if the direct

<sup>10</sup> Multiplying the coefficient of the treatment effect on the mediator (top panel of Table 5) by the coefficient of the mediator on the outcome variable (middle panel of Table 5). Let  $Y$  be the outcome,  $X$  the treatment indicator, and  $Z$  the mediator. Combine  $Y = \alpha_1 + \beta_1 X + \gamma Z + \epsilon_1$  and  $Z = \alpha_2 + \beta_2 X + \epsilon_2$  to get  $Y = (\alpha_1 + \gamma\alpha_2) + (\beta_1 + \gamma\beta_2)X + (\epsilon_1 + \gamma\epsilon_2)$ . Thus,  $\beta_1$  is the direct treatment effect,  $\gamma\beta_2$  is the mediated effect, and their sum is the total treatment effect.

treatment effect is larger than the total effect. For example, if the narrative treatment decreases emotional intensity, and emotional intensity tends to increase valuations, then ACME would be negative (while the narrative effect is positive), leading to a negative share of the mediated effect out of the total effect. Thus, the larger that share is, the stronger the mediation.

Notice that the mediation analysis becomes more complex for non-linear models (e.g., Tobit) and non-binary treatments (blank, list, and treatment). Therefore, for simplicity, we use censored OLS for the WTA regressions (WTA top coded at \$100 as in Figure 1) and pool the blank and list conditions as the baseline group in Table 5. Appendix Table A6 excludes the blank condition participants to compare narrative to list only. Results are qualitatively unchanged.

Column 1 shows that the treatment did not affect participants' moods and had no impact on valuations. Therefore, the share of the treatment effect that is mediated by mood is almost precisely zero. Column 2 shows that the intensity of the emotional connection to the item was not affected by the treatment. That result was surprising as we expected the treatment to have some influence over participants' current affection for their items. However, it did significantly affect valuations (one STD increase is associated with \$16.83 higher WTA), in line with our expectations. As can be seen by the negative share in the bottom panel, overall, these emotional connection patterns go against the direction of the narrative effect (i.e., by that account, the narrative treatment would have a negative effect). Hence, mood and the intensity of the emotional connection to the item, i.e., the immediate and anticipated emotions accounts, are unlikely to drive the narrative effect on valuations.

Moving on to participants' reported considerations in choosing their selling prices, columns 3 and 4 show that the weights of the original cost of the hat and the cost of replacement considerations in the selling decision are not affected by the treatment (i.e., participants in all treatments reported similar weights), but they have a negative impact on valuations (i.e., participants for whom cost played a bigger factor had lower WTA values). Taken together, the bottom panel shows that the share of the treatment effect these considerations are able to explain is very small.

Next, the top panel of column 5 reveals that participants under the narrative treatment were less interested in the monetary profit they could make from selling their hats. Moreover, the middle panel shows that participants who reported higher weights on profit considerations had lower minimal selling prices. This chained effect is estimated to account for about 30% of the total treatment effect. Column 6 shows that the narrative treatment led to placing lower weights on looks considerations (e.g., the value of the item's design). However, since considering looks did not affect valuations (i.e., no second stage), the mediated effect is close to zero.

Columns 7-9 show that considering item associations with other people, memories and item's sentiment all exhibit a similar pattern: a non-significant positive first stage (p-values are .181, .189,

**Table 5** Mood, Emotional Connection, and Price Considerations (Study 3).

Variables	(1) Mood	(2) Connection	(3) Cost	(4) Replacement	(5) Profit	(6) Looks	(7) People	(8) Sentiment	(9) Memories	(10) Gut
<i>Treatment Effect on Mediator</i>										
Narrative	0.001 (0.174)	-0.044 (0.169)	-0.043 (0.174)	0.044 (0.178)	-0.312* (0.165)	-0.300* (0.170)	0.240 (0.178)	0.225 (0.170)	0.252 (0.177)	-0.105 (0.160)
Constant	-0.025 (0.102)	0.004 (0.103)	0.020 (0.103)	-0.005 (0.101)	0.118 (0.107)	0.103 (0.104)	-0.093 (0.010)	-0.085 (0.102)	-0.103 (0.097)	0.040 (0.112)
<i>Mediator Effect on Censored WTA</i>										
Mediator	0.903 (2.734)	16.83*** (2.189)	-13.65*** (2.143)	-11.11*** (2.381)	-9.746*** (2.638)	1.160 (2.929)	8.920*** (2.935)	15.63*** (2.000)	13.59*** (2.396)	0.101 (2.730)
Narrative	9.387* (5.588)	10.13** (4.586)	9.111* (5.178)	10.19* (5.233)	6.649 (5.276)	10.04* (5.629)	7.552 (5.498)	6.176 (4.963)	6.263 (4.947)	9.704* (5.629)
Constant	46.06*** (3.240)	45.97*** (2.864)	46.01*** (2.866)	45.68*** (3.041)	46.89*** (3.175)	45.62*** (3.216)	46.57*** (3.022)	47.07*** (2.827)	47.14*** (3.046)	45.73*** (3.248)
<i>Mediated Effect out of Total Treatment Effect</i>										
Product	0.001	-0.079	0.062	-0.051	0.324	-0.037	0.228	0.375	0.365	0.001
Simulation	0.005 [.002,.031]	-0.076 [-.453,-.034]	0.065 [-.151,.268]	-0.035 [-.119,.085]	0.295 [.131,1.12]	-0.025 [-.092,-.009]	0.196 [-1.10,1.26]	0.319 [.127,1.93]	0.311 [.126,1.93]	0.005 [.002,.028]
Obs	146	146	145	145	145	145	145	145	145	145

*Note.* Robust standard errors in parenthesis and 95% confidence intervals in square brackets. The DV in the top panel is the column's variable (a standardized self-reported numerical value). In the middle panel, the DV is minimal selling prices censored at \$100 (OLS regression). The list and blank treatments are omitted in both panels. The bottom panel shows estimations of the average mediation effect divided by the total treatment effect. Consideration variables were normalized so that they sum to 1 per participant, and then the mean (per consideration, across participants) was subtracted and divided by the standard deviation. The product in the bottom panel refers to the product of the top coefficients from the upper and middle panels divided by the censored OLS narrative effect on WTA (\$9.39). The number of simulations is according to the number of observations. One participant who rated all zeros was omitted. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

and .155, respectively) and significant positive second stage. Thus, each of these considerations may explain a sizable share of the narrative effect (around 20-30%). Notice, however, that these three mediation accounts capture a similar portion of the effect due to their relatively high inter-correlations ( $r$  between .37-.68), as they all refer to associations with the item. Grouping the three considerations by summing their weights and replicating the analysis (not reported), points to a significant first-stage coefficient of 0.717 and a significant second-stage coefficient of 6.48, estimated to explain about 42% of the effect. Finally, the last column shows that the reported weight of gut feeling considerations was not affected by the treatment and did not affect selling prices.

In summary, we tested eight potential WTA considerations (or salient item attributes), four that were hypothesized to be more analytical (columns 3-6), and four that were hypothesized to be more associative (columns 7-10). We found evidence suggesting that a large portion of the narrative treatment can be explained by a shift of attention from profit considerations (but not cost or looks) to item associations with people, memories, and sentiment (but not a gut feeling).

### 3.2. Natural Language Processing

In prior sections, we have shown that the production and reporting of narratives, on average, raise selling prices. However, we should expect some types of narratives to be more successful than others in doing so. That is somewhat similar to the analysis of Table 4, but using a measure that was supplied before participants learned about the opportunity to sell their item. Another difference is that, by necessity, this analysis is based solely on participants (across all three studies) in the narrative treatment (746 observations), so it is impossible to test for interactions of narrative features with the treatment. Thus, this final set of results uses natural language processing techniques to examine the correlation between the content of narratives and minimal selling prices within the narrative group. The median narrative contained 45 words and took 102 seconds to write (in comparison, the median list was 15 words and took 79 seconds to write).<sup>11</sup>

As in Table 4, the dependent variable for this analysis is the minimal selling price (top-coded as the maximal MPL price for UWS participants), standardized for each item (for each narrative-item group, the mean WTA value was subtracted from participants' WTAs and divided by the STD to achieve a standard normal distribution for the narrative group under each item). Below, we present two approaches for analyzing participants' texts: a Bag-of-Words model (using the frequency of individual and adjacent words as predictors) and embeddings-based models (projecting the semantic meaning of the text into a numeric vector space and using its different dimensions as predictors).

For the Bag-of-Words approach, first, Figure 3 presents frequent words participants used in their texts (i.e., font size represents general usage) and words that are used more by high WTA participants (i.e., font color is according to the difference in frequencies between above and below median WTA participants). Many of the most frequent words ('mug,' 'hat,' 'time,' 'bought') are neutral, i.e., used by everyone. One notable exception is 'like,' which low WTA participants use more often. However, a larger color variation appears for slightly less frequent words, such as 'passed,' 'away,' and 'daughter' for high WTA and 'make,' 'work,' and 'good' for low WTA.

Next, we more accurately identify words and phrases that are predictive of minimal selling prices. Namely, the text is vectorized into tokens of one to five consecutive words rather than single words only as above (e.g., "I wear hats" → [I, wear, hats, I wear, wear hats, I wear hats]). Only tokens that appear in over 1% of texts and are not "stop words" (e.g., 'the') were kept, leading to a set of 393 tokens. We count the frequency of each of these tokens per participant and weigh it by its average usage across all texts (Term Frequency-Inverse Document Frequency). These tokens' weights in participants' texts are then regressed against standardized minimal selling prices.

<sup>11</sup> In Study 1/2/3, the median narrative was 42/47/37 words and 110/101/77 seconds, while the median list was 18/14/9 words and 91/77/44 seconds, respectively.







negative, while the effect of anger is positive. Column 2, in line with the previous results regarding mood and the valence of the narrative, shows that the text's sentiment is not predictive of WTA. Finally, in column 3, all classifications are used together, and the previously mentioned associations are enhanced. However, notice that even this last specification has relatively low explanatory power ( $R^2 = 4.0\%$ ).

**Table 6** Text Semantics and Minimal Selling Prices.

Variables	(1) Emotion	(2) Sentiment	(3) Pooled
Joy	0.094 (0.0820)		0.116 (0.0771)
Disgust	-0.067* (0.022)		-0.064** (0.020)
Anger	0.065** (0.013)		0.064** (0.012)
Fear	0.0185 (0.053)		0.0198 (0.056)
Surprise	-0.012 (0.029)		-0.007 (0.030)
Sadness	0.177* (0.069)		0.179* (0.072)
Negative		-0.005 (0.016)	-0.030 (0.019)
Positive		-0.019 (0.076)	-0.054 (0.027)
Constant	0 (0.012)	0 (0.002)	0 (0.010)
Observations	743	743	743
$R^2$	0.039	0.000	0.040

*Note.* Standard errors clustered by item in parentheses. Narrative group participants only. Classifications were produced by two pre-trained NLP models hosted on HuggingFace. The DV is minimal selling prices standardized per item, and all explanatory variables were standardized as well. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

The unexpected impact of negative emotions, which was found using both self-reported classifications and text analysis, raises the question of whether this occurred because the experiment put participants in the position of potentially selling their items. However, since the text analysis evidence is indicative of participants' emotions before they learned about the selling opportunity (i.e., these emotions were not a response to the selling mechanism), we believe this is less likely. Instead, the positive association of angrier and sadder stories with selling prices might reflect emotions that participants transitioned to or from, making the hat a symbol of better times (e.g., a gift from a

person who passed away). That is also consistent with our findings that self-reported mixed item experiences increase valuations compared to just positive ones. In contrast, disgust entered with a negative sign, most likely because it is high for participants who described their items as dirty or worn out. Future research could profitably examine whether positive emotions are more predictive of behavior in the context of buying rather than selling.

#### 4. Discussion

By examining the consequences of narrative thinking for valuations – perhaps the most fundamental economic variable – this paper provides an entry point for empirical economic research on self-told narratives. We document one important consequence of narrative thinking: its impact on valuations (or preferences over money and goods). We show that writing a story (as opposed to enumerating a list of attributes or no writing at all) has large, systematic, and statistically significant effects on participants' WTA. That goes beyond the persuasive effects of narratives, which have been the focus of an extensive literature, and sheds light on the role of narrative thinking in private decision-making.

Overall, participants in the narrative condition were 10.1 percentage points more likely to refuse to sell for any price on the MPL (i.e.,  $WTA > \$100$  in Study 1 and 3, and  $WTA > \$300$  in Study 2). Handling these subjects as if they were censored after the highest price on the MPL (through a Tobit model), we find a narrative effect on valuations of approximately \$10 in studies 1 and 3 and \$45 in Study 2 over the list treatment (the larger effect is in part mechanically due to the MPL structure). In Study 3, we also featured a blank treatment (no writing task), which led to slightly lower valuations than the list treatment (i.e., a larger narrative effect). This provides evidence that the difference between WTA values in the narrative and list conditions was caused by prices being boosted in the former rather than suppressed in the latter.

In addition, a follow-up self-report questionnaire and natural language processing of participants' texts were used to identify narrative and item features that might mediate the effect of narrative thinking. First, counter to Lerner et al. (2004)'s carry-over of emotions account under which positive mood leads to higher valuations, we find that the valence of the item-related experience, immediate mood, and narrative sentiment did not drive our results. If anything, sadness and negative item associations led to higher WTA values. Also, although a stronger emotional attachment to the item led to higher valuations, it was not affected by the treatment. Hence, it does not seem to play a role in the mechanism via which narrative thinking influences valuations.

What, then, *is* responsible for the observed narrative effects? First, the act of generating and articulating a narrative focuses attention on – makes salient – different considerations (e.g., links between the item and people and memories important to the seller), resulting in higher valuations.

That is, prices under the narrative treatment reflect, to a greater extent, giving up a symbol of relationships and experiences. We find direct evidence for that mechanism in participants' self-reported price considerations (i.e., more weight was put on item associations and less on monetary profit under the narrative treatment), and also indirect evidence through self-reported item classifications and the Bag-of-Words text analysis (e.g., items that are related to people had larger premiums under the narrative treatment). Second, the fact that the treatment effect was robust to the inclusion of all covariates suggests that there might be a higher baseline price for selling under the narrative treatment (regardless of item attributes). That is consistent with both increased uncertainty (e.g., the treatment increased the complexity of assigning a dollar value to the item) and with an anticipated emotions account (whereby meaning and associations will be lost if the item is sold). However, participants did not report a more intense emotional connection to the item under the narrative treatment, making the latter somewhat less likely.

These studies have several limitations. The narrative effect on valuations that we observe could have potential artifactual causes. One artifactual account could be that writing stories takes more time or effort than generating lists, which could increase valuations through an "IKEA effect" (Norton et al., 2012). We use word count and completion times as measures of effort to address that concern. Word counts were naturally longer on average in the narrative condition (median of 45 vs. 15 words). However, there was no significant correlation between word count and valuations in any of the studies (within the experimental conditions). Completion times of the writing task under the narrative treatment were only 23 seconds longer (median of 102 vs. 79 seconds) than in the list condition, and controlling for that in the regressions does not qualitatively affect the results. Overall, the induced effort account does not seem to drive the narrative effect.

Another possible limitation (though also, we believe, a strength) of the study was the use of natural self-told narratives and self-selected items. It introduced two sources of noise: in the items themselves and in the narratives associated with the items. First, while balanced out across groups, the variance in the self-selected items (e.g., comparing a fancy handmade mug to a cheap generic one) presumably increases the variance in valuations regardless of the treatment. We attempted to reduce that variance by controlling for a self-reported cost proxy and item characteristics. Second, the variance in the natural narratives (e.g., a hat that was self-bought in a general store compared to one that was gifted on Christmas) will likely affect the treatment effect and presumably increase the SE of our estimates. That is mitigated by controlling for an array of narrative classifications. The fact that, despite the noise, we still observe a robust impact of narrative thinking is a testament to the strength of the effect. Moreover, using self-generated narratives ensures that individuals in both conditions have access to the same information and enhances the external validity and generalizability of the results. Asking participants to provide narratives did not reveal new information about such narratives but only made them more salient.

Lastly, the magnitude of our effect might be specific to the items used in the experiments. Although we deliberately used two different items (and in the second study, we asked for two types of hats), the size of the narrative effect might not generalize to other types of items – e.g., those of very high monetary stakes such as cars and houses. Future research could test for the occurrence of narrative effects with a broader range of goods. While the current research inevitably has limitations, it lends support to the potential fruitfulness of pursuing these and many other narrative-related directions in the future.

Our results speak to a range of documented economic patterns. First, classic choice theory predicts that gift-giving carries a dead-weight loss since cash transfers allow recipients to buy the item they like the most (Waldfogel, 1993). However, if being given as a gift provides the item with a more favorable narrative, it might generate a surplus. That aligns with the finding that non-monetary gifts have a higher impact on workers' productivity (Kube et al., 2012). A similar account may explain “context-markups” – i.e., increased willingness to pay for products due to the context in which they are sold (e.g., souvenir stores and merchandise stands at ball games and concerts). The context-dependent demand for such products plausibly reflects the added value of having the product associated with a location or event – a narrative.

Second, the idea that economic behavior could be altered without changing information or incentives is not new. In a review by DellaVigna and Gentzkow (2010), the authors differentiate information-based and preference-based persuasion, stressing the prevalence and effectiveness of the latter, e.g., citing Resnik and Stern's (1977) finding that only 50% of ads are informative. In addition, Bertrand et al. (2010) documented the impact of non-informational interventions through a field experiment in which participants were mailed consumer loan advertisements with randomized content. They found that non-informative ads (e.g., showing an attractive person), which trigger associative rather than reasoned responses, led to greater demand for the loans than informative ads (e.g., describing potential loan uses).

Lastly, this paper shows that narrative thinking could be triggered using a simple question, and suggests that triggering (or not triggering) narrative thinking may have an impact on the decisions of customers, investors, and employees. For example, when negotiating over a car, the seller might be able to inflate the selling price by telling a story about how great the car is for family trips on the weekends, whereas the buyer could deflate the price by analytically going over the car's inspection items. Managers should carefully design their communications with this triggering in mind. In particular, there might be a trade-off between listing attractive product features (for customers) or job attributes (for employees), which would provide analytical grounds for purchasing the product or applying for a job, but which could also reduce the likelihood of narrative thinking, producing the opposite effect.

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## Supplementary Tables and Screenshots

### Appendix A: Tables

**Table A1** Demographics Shares by Groups (Studies 1 and 2)

	Study 1			Study 2 - Misc.			Study 2 - Sign.			Pooled		
	List	Narr	Diff	List	Narr	Diff	List	Narr	Diff	Prolific	MTurk	Diff
<u>Employment:</u>												
Full Time	0.517	0.455	0.062	0.599	0.624	-0.025	0.585	0.615	-0.030	0.486	0.606	0.120***
Part Time	0.145	0.132	0.013	0.153	0.139	0.014	0.201	0.155	0.046	0.139	0.162	0.023
Unemployed	0.162	0.145	0.018	0.122	0.127	-0.005	0.115	0.141	-0.025	0.154	0.126	-0.028
Retired/Disabled	0.137	0.183	-0.046	0.063	0.065	-0.002	0.038	0.056	-0.018	0.160	0.056	-0.104***
Student	0.038	0.085	-0.047**	0.063	0.045	0.018	0.060	0.033	0.027	0.062	0.050	-0.012
<u>Race/Ethnicity:</u>												
White	0.795	0.740	0.054	0.802	0.735	0.067	0.761	0.756	0.005	0.768	0.763	-0.005
African American	0.115	0.123	-0.008	0.068	0.098	-0.030	0.094	0.085	0.010	0.119	0.086	-0.033*
Asian	0.060	0.068	-0.008	0.104	0.106	-0.003	0.098	0.108	-0.010	0.064	0.104	0.040**
Other	0.030	0.068	-0.038*	0.027	0.061	-0.034*	0.047	0.052	-0.005	0.049	0.047	-0.002
<u>Education:</u>												
High School or Less	0.090	0.094	-0.004	0.086	0.069	0.016	0.081	0.131	-0.050	0.092	0.091	-0.001
Some College	0.214	0.251	-0.037	0.203	0.159	0.044	0.201	0.178	0.022	0.232	0.185	-0.048**
Assoc./Prof. Degree	0.085	0.132	-0.046	0.171	0.122	0.049	0.128	0.164	-0.036	0.109	0.146	0.037*
Bachelor's Degree	0.415	0.323	0.091**	0.360	0.486	-0.125***	0.410	0.385	0.025	0.369	0.412	0.044
Advanced Degrees	0.197	0.200	-0.003	0.180	0.163	0.017	0.179	0.141	0.039	0.198	0.166	-0.032
<u>Income:</u>												
Less than \$20,000	0.115	0.111	0.005	0.099	0.122	-0.023	0.128	0.113	0.016	0.113	0.116	0.003
\$20,000-39,999	0.145	0.170	-0.025	0.189	0.171	0.018	0.137	0.146	-0.009	0.158	0.161	0.003
\$40,000-49,999	0.077	0.077	0.000	0.086	0.082	0.004	0.073	0.141	-0.068**	0.077	0.094	0.017
\$50,000-74,999	0.184	0.174	0.009	0.252	0.233	0.020	0.239	0.192	0.047	0.179	0.230	0.051**
\$75,000-99,999	0.171	0.162	0.009	0.158	0.192	-0.034	0.184	0.169	0.015	0.166	0.176	0.010
\$100,000 and above	0.308	0.306	0.001	0.216	0.200	0.016	0.239	0.239	-0.000	0.307	0.223	-0.084***
<u>Household Size:</u>												
HH size = 1	0.214	0.183	0.031	0.189	0.188	0.001	0.137	0.188	-0.051	0.198	0.175	-0.023
HH size = 2	0.295	0.357	-0.063	0.315	0.314	0.001	0.333	0.268	0.066	0.326	0.309	-0.018
HH size = 3	0.192	0.179	0.014	0.212	0.188	0.024	0.214	0.207	0.007	0.186	0.205	0.019
HH size ≥ 4	0.299	0.281	0.018	0.284	0.310	-0.026	0.316	0.338	-0.022	0.290	0.312	0.022
Female	0.496	0.523	-0.028	0.545	0.502	0.043	0.526	0.488	0.037	0.510	0.515	0.006
Age	44.611	44.162	0.449	39.090	39.180	-0.090	38.949	37.981	0.967	44.386	38.819	-5.566***
N	234	235	469	222	245	467	234	213	447	469	914	1383

*Notes.* The first three columns are from study 1, which asked Prolific workers for a personally significant mug. The next six columns are from study 2, which asked MTurk workers for a hat, either a miscellaneous one (columns 4-6) or a personally significant one (columns 7-9). Finally, the last three columns pool participants by recruitment platform (i.e., study 1 versus study 2). The “Diff” column presents the difference between the groups (i.e., list versus narrative, Prolific versus MTurk). The significance of the t-tests can be inferred from the asterisks - \* $p \leq .1$ , \*\* $p \leq .05$ , \*\*\* $p \leq .01$ .

**Table A2 Demographics Shares by Groups (Study 3)**

	Treatment			Differences	
	List	Narrative	Blank	List-Narrative	Narrative-Blank
<u>Employment:</u>					
Full Time	0.064	0.060	0.041	0.004	-0.019
Part Time	0.064	0.000	0.041	0.064*	0.041
Unemployed	0.000	0.000	0.000	0.000	0.000
Retired/Disabled	0.000	0.020	0.041	-0.020	0.021
Student	0.872	0.920	0.878	-0.048	-0.042
<u>Race/Ethnicity:</u>					
White	0.660	0.620	0.571	0.040	-0.049
African American	0.149	0.080	0.061	0.069	-0.019
Asian	0.149	0.300	0.245	-0.151*	-0.055
Other	0.043	0.000	0.122	0.043	0.122**
<u>Education:</u>					
High School or Less	0.021	0.040	0.082	-0.019	0.042
Some College	0.298	0.280	0.184	0.018	-0.096
Assoc./Prof. Degree	0.021	0.020	0.020	0.001	0.000
Bachelor's Degree	0.404	0.360	0.490	0.044	0.130
Advanced Degrees	0.255	0.300	0.224	-0.045	-0.076
Female	0.319	0.460	0.327	-0.141	-0.133
Age	23.255	23.480	24.469	-0.225	0.989
<i>N</i>	47	50	49	97	99

*Notes.* The first three columns show the share of participants from each treatment in every demographic group. The last two columns present t-tests testing for differences between the shares of the different treatments. \* $p \leq .1$ , \*\* $p \leq .05$ , \*\*\* $p \leq .01$ .

**Table A3** Narrative Effect on Minimal Selling Prices (Studies 1-3 including invalid observations).

Variables	(1) Logit: Non-Sellers	(2) OLS: Sellers' WTA	(3) Tobit: WTA
<i>Study 1 - WTA for Significant Mug (Prolific).</i>			
Narrative	0.117*** (0.0406)	0.354 (3.768)	11.53** (4.870)
Constant	0.215*** (0.026)	41.03*** (2.600)	60.05*** (3.374)
Observations	483	351	483
<i>Study 2 - WTA for Miscellaneous Hat (MTurk).</i>			
Narrative	0.079*** (0.0257)	13.66** (5.562)	35.99*** (9.255)
Constant	0.059*** (0.015)	35.01*** (3.544)	52.58*** (5.792)
Observations	508	457	508
<i>Study 2 - WTA for Significant Hat (MTurk).</i>			
Narrative	0.122*** (0.0333)	6.313 (8.418)	42.70*** (12.64)
Constant	0.125*** (0.020)	71.64*** (5.455)	107.8*** (8.018)
Observations	502	410	502
<i>Study 2 - Pooled.</i>			
Narrative	0.105*** (0.035)	13.66** (5.563)	36.82*** (9.462)
Significant	0.092** (0.036)	36.63*** (6.504)	53.30*** (9.523)
Interaction	-0.011 (0.045)	-7.351 (10.09)	4.264 (15.42)
Constant	0.0586*** (0.0152)	35.01*** (3.544)	53.13*** (5.858)
Observations	1,010	867	1,010
<i>Study 3 - WTA for Spontaneous Hat (Field).</i>			
Narrative	-0.062 (0.074)	16.45*** (5.894)	9.693 (7.422)
List	-0.051 (0.074)	8.553 (5.576)	3.649 (7.494)
Constant	0.193*** (0.059)	33.47*** (5.792)	50.10*** (8.583)
Observations	135	129	150

*Note.* Robust standard errors in parentheses. Column 1 shows the baseline probability (constant) and marginal effects (dy/dx) at the mean from a Logit regression in which the DV is an indicator for refusing all prices. Column 2 shows the mean selling price (constant) and marginal effects from OLS regressions in which the DV is WTA, and participants who refused all prices are excluded. Column 3 shows the mean selling price (constant) and marginal effects from Tobit regressions (accounting for truncation) in which the DV is WTA, and participants who refused all prices are included. \*\*\*p<0.01, \*\*p<0.05, \*p<0.1.

**Table A4** Narrative Effect on Logged Minimal Selling Prices.

Variables	(1) OLS: Sellers' WTA	(2) OLS: Censored WTA	(3) Tobit: WTA
<i>Study 1 - <math>\ln(WTA)</math> for Mug (Prolific).</i>			
Narrative	0.056 (0.136)	0.190* (0.115)	0.335* (0.188)
Constant	3.163*** (0.094)	3.484*** (0.083)	3.973*** (0.135)
Observations	340	469	469
<i>Study 2 - <math>\ln(WTA)</math> for Miscellaneous Hat (MTurk).</i>			
Narrative	0.403*** (0.123)	0.618*** (0.131)	0.712*** (0.148)
Constant	2.852*** (0.085)	3.006*** (0.091)	3.050*** (0.099)
Observations	418	467	467
<i>Study 2 - <math>\ln(WTA)</math> for Significant Hat (MTurk).</i>			
Narrative	0.189 (0.127)	0.399*** (0.123)	0.561*** (0.164)
Constant	3.710*** (0.086)	3.983*** (0.087)	4.160*** (0.109)
Observations	358	447	447
<i>Study 3 - <math>\ln(WTA)</math> for Hat (Field).</i>			
Narrative	0.507*** (0.181)	0.384** (0.174)	0.457** (0.216)
List	0.269 (0.187)	0.173 (0.186)	0.152 (0.215)
Constant	3.268*** (0.169)	3.522*** (0.172)	3.641*** (0.216)
Observations	127	146	146

*Notes.* Robust Standard errors in parentheses. The DV is the logged minimal selling price, where participants who refused all prices are excluded in column 1, censored (treated as if they accepted 100/300) in column 2, or accounted for the probability of refusing to sell (Tobit) in column 3. In studies 1 and 2, the List treatment indicator is omitted. In study 3, the Blank treatment and session indicators are omitted. \*\*\*p<0.01, \*\*p<0.05, \*p<0.1.

**Table A5** Classifications Share by Item.

Variables	Study 1	Study 2			Study 3
		Misc.	Sig.	$\chi^2$	
Came to Possess the Item (Shares)					
Gift	0.509	0.350	0.394	1.722	0.307
Inherited	0.068	0.045	0.080	4.901**	0.092
Prize	0.025	0.039	0.046	0.219	0.039
Self-made	0.010	0.004	0.012	2.016	0.020
Self-bought	0.300	0.443	0.367	7.033***	0.438
Souvenir	0.075	0.087	0.817	0.116	0.046
NA	0.012	0.031	0.020	1.349	0.059
Experience that Makes the Item Significant (Shares)					
Positive	0.849	0.774	0.882	20.98***	0.706
Negative	0.008	0.012	0.014	0.090	0.000
Both	0.118	0.079	0.082	0.029	0.092
NA	0.025	0.136	0.022	44.92***	0.203
Reason for Wearing That Specific Hat (Shares)					
Looks					0.261
Random					0.052
Default					0.157
Only Option					0.072
Easy Access					0.052
Functionality					0.242
Sentiment					0.033
Sell					0.000
Other					0.131
Binary Variables (Shares)					
Occupation Related	0.108	0.120	0.138	0.679	0.105
Other Related	0.520	0.343	0.490	22.62***	0.366
Custom-Made	0.172	0.134	0.171	2.741*	0.085
Used Often	0.791	0.508	0.673	28.57***	0.850
Continuous Variables (Means)					
Cost Proxy (\$)	15.19	22.85	25.37	2.178**	26.00
Ownership Years	6.611	4.526	5.672	3.376***	2.26
Current Mood (0-10)					6.375
Emotional Connection (0-10)					5.596
Considerations (0-10):					
Cost					5.454
Replacement					6.290
Looks					6.067
Sentiment					6.302
Memories					5.668
Gut Feeling					5.195
Related People					4.327
Monetary Profit					6.475
Observations	469	467	445		146

*Notes.* Reports the share of participants choosing each category in the post-MPL self-report questionnaires. For continuous variables, the mean is reported. The Chi-square and t-statistics are regarding the differences between Miscellaneous and Significant hats (study 2 only). In study 1, 59 participants did not supply a cost proxy (filled '9999'), and 34 could not supply ownership years. In study 2, 92 and 58 participants did not supply a cost proxy and ownership years, respectively. In study 3, 13 and 13 participants did not supply a cost proxy and ownership years, respectively.

**Table A6** Mood, Emotional Connection, and Price Considerations (Study 3) - Blank Treatment Omitted.

Variables	Mood	Emotion	Cost	Replacement	Profit	Looks	People	Sentiment	Memories	Gut
<i>Treatment Effect on Mediator</i>										
Narrative	0.109 (0.202)	-0.057 (0.203)	-0.134 (0.205)	0.041 (0.206)	-0.308* (0.173)	-0.287 (0.217)	0.253 (0.210)	0.175 (0.201)	0.353* (0.205)	-0.080 (0.183)
Constant	-0.133 (0.143)	0.017 (0.152)	0.111 (0.149)	-0.002 (0.145)	0.114 (0.118)	0.090 (0.169)	-0.106 (0.149)	-0.035 (0.147)	-0.204 (0.142)	0.015 (0.143)
<i>Mediator Effect on Censored WTA</i>										
Mediator	-1.702 (3.349)	18.90*** (2.005)	-14.20*** (2.480)	-11.61*** (2.898)	-11.71*** (3.730)	-0.101 (3.689)	7.454** (3.538)	14.33*** (2.502)	13.17*** (2.599)	4.853 (3.883)
Narrative	8.232 (6.323)	9.127* (5.064)	6.749 (5.626)	9.127 (5.888)	5.037 (5.955)	8.618 (6.393)	6.764 (6.118)	6.137 (5.622)	3.994 (5.713)	9.035 (6.340)
Constant	47.16*** (4.375)	47.06*** (3.609)	48.36*** (3.658)	46.76*** (4.044)	48.12*** (4.339)	46.79*** (4.400)	47.57*** (4.068)	47.29*** (3.929)	49.47*** (4.227)	46.71*** (4.439)
<i>Mediated Effect out of Total Treatment Effect</i>										
Product	-0.023	-0.134	0.236	-0.059	0.448	0.004	0.234	0.312	0.578	-0.048
Simulation	-0.013 [-.046,.192]	-0.136 [-3.64,2.84]	0.228 [-.647,1.80]	-0.021 [-.093,.068]	0.405 [-1.48,1.71]	0.030 [-.065,.263]	0.168 [-2.92,1.46]	0.226 [-3.64,1.99]	0.439 [-4.23,4.16]	-0.034 [-.350,.232]
Obs	97	97	96	96	96	96	96	96	96	96

*Note.* Robust standard errors in parenthesis and 95% confidence intervals in square brackets. The DV in the top panel is the column's variable (a standardized self-reported numerical value). In the middle panel, the DV is minimal selling prices censored at \$100 (OLS regression). The list treatment indicator is omitted in both panels and blank treatment participants are excluded. The bottom panel shows estimations of the average mediation effect divided by the total treatment effect. Consideration variables were normalized so that they sum to 1 per participant, and then the mean (per consideration, across participants) was subtracted and divided by the standard deviation. One participant who rated all zeros was omitted. \*\*\*p<0.01, \*\*p<0.05, \*p<0.1.

**Table A7** Descriptive Statistics of NLP Classifications.

	<i>Emotions</i>							<i>Sentiment</i>		
	Neutral	Joy	Disgust	Anger	Fear	Surprise	Sadness	Neutral	Negative	Positive
Mean	0.344	0.400	0.048	0.030	0.025	0.078	0.077	0.277	0.058	0.665
STD	0.310	0.364	0.134	0.085	0.103	0.150	0.194	0.263	0.146	0.324
Min	0.001	0.000	0.000	0.001	0.000	0.001	0.001	0.008	0.001	0.005
25%	0.058	0.041	0.004	0.005	0.001	0.010	0.005	0.049	0.004	0.367
50%	0.239	0.298	0.009	0.010	0.003	0.025	0.010	0.157	0.007	0.817
75%	0.602	0.782	0.025	0.022	0.009	0.071	0.029	0.499	0.024	0.948
Max	0.961	0.993	0.981	0.879	0.985	0.969	0.974	0.912	0.939	0.989

*Note.* Classifications were produced by two pre-trained NLP (HuggingFace) models. Predictions for texts written by 743 participants under the narrative treatment before knowing they would be offered to sell it.

In studies 1 and 2, the follow-up questionnaire contained one more, unincentivized, decision: participants were asked whether they would be willing to trade their item for an identical new one. If they answered yes, they were asked how much they would be willing to pay (WTP) on top of their original item to obtain the new item. If they answered no, they were asked how much they would need to be paid (WTA) on top of the new item to let go of their original one. Note that for some items, it is unlikely that there would be an exact replacement, and therefore, the patterns of this hypothetical choice should be interpreted with caution. Nevertheless, and consistent with the general pattern observed for the main WTA variable, 224 out of 693 (32%) participants in the narrative group agreed to the trade, while 289 out of 690 (42%) did so in the list group. Column 1 of Appendix Table A8 presents a logistic regression showing that this 9.6 percentage points (23%) effect is statistically significant ( $p < .01$ ). Also, treating WTA values as positive and WTP as negative while top coding the extremely high values (at \$1000 and -\$1000) points to a narrative effect of \$98. That is, participants from the narrative group overall required significantly more money to trade their items for equivalent new versions. Notice that both the extensive and intensive margin effects are driven by Study 2 (particularly the extensive margin effect, which is almost ten times larger than in Study 1).

**Table A8 Trade for a New Identical Item.**

Variables	(1) Logit: Trade	(2) OLS: Trade Price	(3) Tobit: Trade Price
<i>Studies 1 and 2 Pooled.</i>			
Narrative	-0.096*** (0.026)	16,502 (14,500)	98.06*** (27.21)
Constant	0.419*** (0.019)	1,774*** (208.7)	236.2*** (18.86)
Observations	1,383	1,383	1,383
<i>Study 1 - Trade Significant Mug.</i>			
Narrative	-0.018 (0.043)	4,567 (4,324)	81.72 (56.32)
Constant	0.316*** (0.030)	2,578*** (494.0)	343.6*** (41.29)
Observations	469	469	469
<i>Study 2 - Trade Miscellaneous Hat.</i>			
Narrative	-0.159*** (0.047)	917.5*** (303.1)	108.6*** (34.62)
Constant	0.550*** (0.033)	791.4*** (178.5)	112.4*** (21.59)
Observations	467	467	467
<i>Study 2 - Trade Significant Hat.</i>			
Narrative	-0.126*** (0.045)	47,711 (46,933)	117.6** (50.00)
Constant	0.397*** (0.032)	1,901*** (316.7)	262.3*** (33.73)
Observations	447	447	447

*Notes.* Robust Standard errors in parentheses. In column 1, the DV is willingness to trade for an identical new item (yes equals 1). In column 2, the DV is the price one's willing to pay/accept in addition to the trade, where choosing to pay for the new item is coded as negative numbers. In column 3, the DV is top-coded at 1000 and -1000. . \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .



## Appendix B: Screenshots

**Figure A1 Study 1 - Upload and Verify Picture.**


We would now like to ask you to **take a photo of a mug (or a cup) of personal significance to you**. Please follow the instructions below and stay on this page until you are done. Only upon completion click the "Next" button.

- First, take your time to consider the alternatives and choose a personally significant mug.
- Second, take a good-quality picture of the mug, **while your hand is visible in the picture**.
- Finally, upload the picture using the button below.

**Note:** You will receive a \$0.5 bonus for supplying authentic picture and text responses in the next two pages. The authenticity will be determined by an objective researcher.

One easy way to do this is to take a picture with your smartphone → email it to yourself from the phone → open the email on your computer → download the file to your desktop → press the button below and select your file in the tab:

Drop files or click here to upload



Please make sure the picture above shows the **mug of personal significance** you selected and that **your hand is visible in that picture**.

- In case the picture will be deemed as fake (for instance, downloaded from online) or doesn't contain a mug, the \$0.5 bonus will not be granted.

If the picture is incorrect, please go back and upload a new one.

**Note:** after proceeding you will not be able to change your responses to the previous questions.

*Notes.* On the LHS is the upload page, on the RHS is the verification page to which participants' pictures were piped.

**Figure A2 Study 2 - Picture Upload.**

We would now like to ask you to **take a photo of one miscellaneous hat (or cap) you own**. Please follow the instructions below and stay on this page until you are done. Only upon completion click the "Next" button.

- First, choose one hat of *no* special personal significance to you.
- Second, take a good-quality picture of the hat, **while your hand is visible in the picture**.
- Finally, upload the picture using the button below.

**Note:** You will receive a \$0.5 bonus for supplying authentic picture and text responses in the next two pages. The authenticity will be determined by an objective researcher.

One easy way to do this is to take a picture with your smartphone → email it to yourself from the phone → open the email on your computer → download the file to your desktop → press the button below and select your file in the tab:

Drop files or click here to upload

We would now like to ask you to **take a photo of a hat (or a cap) of personal significance to you**. Please follow the instructions below and stay on this page until you are done. Only upon completion click the "Next" button.

- First, take your time to consider the alternatives and choose your *most personally significant* hat.
- Second, take a good-quality picture of the hat, **while your hand is visible in the picture**.
- Finally, upload the picture using the button below.

**Note:** You will receive a \$0.5 bonus for supplying authentic picture and text responses in the next two pages. The authenticity will be determined by an objective researcher.

One easy way to do this is to take a picture with your smartphone → email it to yourself from the phone → open the email on your computer → download the file to your desktop → press the button below and select your file in the tab:

Drop files or click here to upload

*Notes.* On the LHS is the upload page of the miscellaneous condition, on the RHS is the high significance condition.

**Figure A3 Study 1 - Randomized Manipulation.**


**LHS (Narrative treatment):**

Please tell the story of your mug (in the picture above) - e.g., how you came to own it.

For example, one answer could be "As a running enthusiast, I practiced long-distance runs for many years. I received this mug after completing my first Marathon."

☐ In the case that the text response will be deemed invalid (for instance, copy-paste or off-topic), the \$0.5 bonus will not be granted.

Please write a one paragraph story of your mug:

**RHS (List treatment):**

Please list the characteristics of your mug (in the picture above).

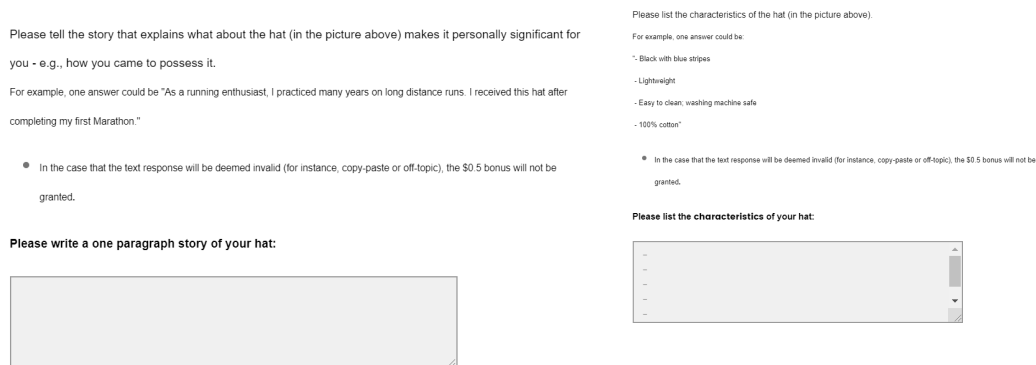
For example, one answer could be:

- 12-ounce blue coffee mug
- Lightweight and easy to carry
- Easy to clean, dishwasher safe
- Double-walled enamel

☐ In the case that the text response will be deemed invalid (for instance, copy-paste or off-topic), the \$0.5 bonus will not be granted.

Please list the characteristics of your mug:

Notes. LHS is the Narrative treatment and RHS is the List.

**Figure A4 Study 2 - Randomized Manipulation.**


**LHS (Narrative treatment):**

Please tell the story that explains what about the hat (in the picture above) makes it personally significant for you - e.g., how you came to possess it.

For example, one answer could be "As a running enthusiast, I practiced many years on long distance runs. I received this hat after completing my first Marathon."

☐ In the case that the text response will be deemed invalid (for instance, copy-paste or off-topic), the \$0.5 bonus will not be granted.

Please write a one paragraph story of your hat:

**RHS (List treatment):**

Please list the characteristics of the hat (in the picture above).

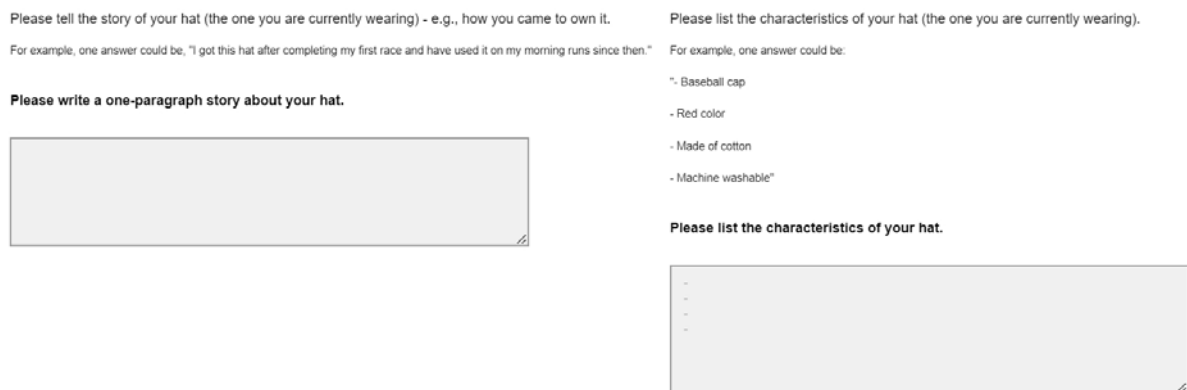
For example, one answer could be:

- Black with blue stripes
- Lightweight
- Easy to clean, washing machine safe
- 100% cotton

☐ In the case that the text response will be deemed invalid (for instance, copy-paste or off-topic), the \$0.5 bonus will not be granted.

Please list the characteristics of your hat:

Notes. LHS is the Narrative treatment and RHS is the List.

**Figure A5 Study 3 - Randomized Manipulation.**


**LHS (Narrative treatment):**

Please tell the story of your hat (the one you are currently wearing) - e.g., how you came to own it.

For example, one answer could be, "I got this hat after completing my first race and have used it on my morning runs since then."

Please write a one-paragraph story about your hat.

**RHS (List treatment):**

Please list the characteristics of your hat (the one you are currently wearing).

For example, one answer could be:

- Baseball cap
- Red color
- Made of cotton
- Machine washable

Please list the characteristics of your hat.

Notes. LHS is the Narrative treatment, RHS is the List, and the Blank group skipped this screen.

**Figure A6 Study 1 - WTA Elicitation Instructions.**

The next question is about the mug you sent us the photo of and just wrote about.

We are about to present you with a decision. We will randomly pick a sample of participants in this experiment (1 out of 25), for whom the decision will count. Please answer the question assuming that you are one of those chosen for your decision to count.

We are now giving you the opportunity to sell your mug to us. On the next page are a series of questions of whether or not you want to sell your mug. Each line will present a choice about whether you want to sell your mug for a specified price.

**If you are among the chosen participants (1:25 chance), then one of your decisions will be randomly selected to count.** For example, if you clicked "yes" on the row "I'm willing to sell my mug for \$5," and it was randomly chosen to count, then we would send you a pre-paid mailing label to send us your mug, and we would give you a \$5 bonus (through Prolific bonus system) immediately after we received it. This is on top of the money you will receive from participating in the study. If you indicated "No," you would keep the mug and not get \$5.

*Before expressing your decisions, please answer the next three questions to make sure the task is clear.*

What would happen in case you were not among the participants who were randomly chosen?

- ☐ You will be asked to send your mug.
- ☐ You will get additional payment.
- ☐ You will keep your mug and will not receive additional payment.

What would happen in case you were randomly chosen, and your decision regarding "I'm willing to sell my mug for \$10" was randomly selected?

- ☐ If you answered "Yes," you will get a pre-paid shipping label to send the mug and receive \$5 in compensation when we receive it.
- ☐ If you answered "Yes," you will get a pre-paid shipping label to send the mug and receive \$10 in compensation when we receive it.
- ☐ If you answered "No," you will keep the mug and receive \$10 in compensation.
- ☐ If you answered "No," you will be asked to send the mug and will not receive additional payment.

Which of your "Yes" or "No" decisions is more likely to get chosen?

- ☐ They are all equally likely.
- ☐ Those regarding higher payments.
- ☐ Those regarding lower payments.
- ☐ The decision regarding "I'm willing to sell my mug for \$10."

**Figure A7 Study 2 - WTA Elicitation Instructions.**

The next question is about the hat you sent us the photo of and just wrote about.

We are about to present you with a decision. We will randomly pick a sample of participants in this experiment, for whom the decision will count. Please answer the question assuming that you are one of those chosen for your decision to count.

We are now giving you the opportunity to sell your hat to us. On the next page are a series of questions of whether or not you want to sell your hat. Each line will present a choice about whether you want to sell your hat for a specified price.

**If you are among the chosen participants, then one of your decisions will be randomly selected to count.** For example, if you clicked "yes" on the row "I'm willing to sell my hat for \$5," and it was randomly chosen to count, then we would send you a pre-paid mailing label to send us your hat, and we would give you a \$5 bonus (through MTurk) immediately after we received it. This is on top of the money you will receive from participating in the study. If you indicated "No," you would keep the hat and not get \$5.

*Before expressing your decisions, please answer the next two questions to make sure the task is clear.*

What would happen in case you were not among the participants who were randomly chosen?

- ☐ You will be asked to send your hat.
- ☐ You will get additional payment.
- ☐ You will keep your hat and will not receive additional payment.

What would happen in case you were randomly chosen, and your decision regarding "I'm willing to sell my hat for \$10" was randomly selected?

- ☐ If you answered "Yes," you will get a pre-paid shipping label to send the hat and receive \$5 in compensation when we receive it.
- ☐ If you answered "Yes," you will get a pre-paid shipping label to send the hat and receive \$10 in compensation when we receive it.
- ☐ If you answered "No," you will keep the hat and receive \$10 in compensation.
- ☐ If you answered "No," you will be asked to send the hat and will not receive additional payment.

**Figure A8 Study 3 - WTA Elicitation Instructions.**

**We are now giving you the opportunity to sell your hat (the one you are currently wearing) to us.**

On the next page are a series of questions about whether or not you agree to sell your hat to us for different prices. After making your choices, a staff member will approach your station and **randomly draw one of your decisions for execution.**

Specifically, choices are numbered, and you will later draw a number to determine which of them counts.

Therefore, you should **consider each price and decide whether you are willing to sell your hat for that price.**

For example, if you answered "Yes" on the row "I'm willing to sell my hat for \$5," and it was randomly chosen to count, we would ask you to hand over your hat and immediately pay you an extra \$5 on top of the participation fee. If you answered "No," you would keep the hat and not get the \$5.

If a transaction occurs (i.e., the randomly chosen price was accepted), we would pay for it in cash upon survey completion.

Before expressing your decisions, please answer the following three questions to ensure the process is clear.

What would happen if your decision regarding "I'm willing to sell my hat for \$10" was randomly selected?


- ☐ If you answered "Yes," you will be asked to hand over your hat and receive \$5 in compensation immediately.
- ☐ If you answered "Yes," you will be asked to hand over your hat and receive \$10 in compensation immediately.
- ☐ If you answered "No," you will keep the hat and receive \$10 in compensation immediately.
- ☐ If you answered "No," you will be asked to hand over the hat and will not receive additional payment.

Which of your decisions is more likely to get chosen for execution?

- ☐ They are all equally likely - the decision is chosen at random.
- ☐ Those regarding higher payments.
- ☐ Those regarding lower payments.
- ☐ The decision regarding "I'm willing to sell my hat for \$10."

If the lowest price for which you are willing to sell your hat to us is \$15, you should:

- ☐ Answer "No" to all questions regarding prices lower than \$15.
- ☐ Answer "Yes" to all questions regarding prices higher or equal to \$15.
- ☐ Both of the above.

**Figure A9 Study 1 - Multiple Price List.**


"- 12-ounce blue coffee mug - Lightweight and easy to carry - Easy to clean; dishwasher safe - Double-coated enamel"

Please make your choices below regarding the mug (one of them might be randomly selected to count).

For ease of use, by selecting "No" all choices above will be automatically populated with "No," and by selecting "Yes" all choices below will be automatically populated with "Yes."

	Decision	
	No	Yes
I'm willing to sell my mug for \$1.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$1.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$2.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$2.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$3.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$3.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$4.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$4.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$5.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$5.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$6.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$6.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$7.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$7.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$8.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$8.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$9.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$9.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$10.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$10.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$11.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$12.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$13.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$14.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$15.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$16.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$17.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$18.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$19.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$20.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$25.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$30.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$35.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$40.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$45.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$50.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$60.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$70.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$80.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$90.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my mug for \$100.0	<input type="radio"/>	<input type="radio"/>

*Notes.* The story/list below the image was piped from the participant's response to the manipulation question.

**Figure A10 Study 2 - Multiple Price List.**

Please make your choices below regarding the hat (one of them might be randomly selected to count).

For ease of use, by selecting "No" all choices above will be automatically populated with "No," and by selecting "Yes" all choices below will be automatically populated with "Yes."

	Decision	
	No	Yes
I'm willing to sell my hat for \$1	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$2	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$3	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$4	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$6	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$7	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$8	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$9	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$10	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$11	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$12	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$13	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$14	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$15	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$16	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$17	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$18	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$19	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$20	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$21	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$22	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$23	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$24	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$25	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$30	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$35	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$40	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$45	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$50	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$55	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$60	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$65	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$70	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$75	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$80	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$85	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$90	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$95	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$100	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$125	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$150	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$175	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$200	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$225	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$250	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$275	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$300	<input type="radio"/>	<input type="radio"/>

*Notes.* Participants' text and picture (omitted) were piped from their response to the manipulation question.

**Figure A11 Study 3 - Multiple Price List.**

Hat's description: "- Baseball cap - Red color - Made of cotton - Machine washable"

Please make your choices below regarding the hat you are currently wearing. **One of these choices will be executed.**

For ease of use, by selecting "No" all choices above will be automatically populated with "No," and by selecting "Yes" all choices below will be automatically populated with "Yes."

	Decision	
	No	Yes
I'm willing to sell my hat for \$0.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$1.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$1.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$2.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$2.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$3.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$3.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$4.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$4.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$5.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$5.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$6.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$6.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$7.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$7.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$8.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$8.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$9.0	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$9.5	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$10	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$11	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$12	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$13	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$14	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$15	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$16	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$17	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$18	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$19	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$20	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$21	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$22	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$23	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$24	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$25	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$30	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$40	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$50	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$75	<input type="radio"/>	<input type="radio"/>
I'm willing to sell my hat for \$100	<input type="radio"/>	<input type="radio"/>

*Notes.* The story/list at the top was piped from the participant's response to the manipulation question.



**Figure A12 Study 1 - Follow-up Questionnaire.**

Would you be willing to trade your mug for the same exact mug but new?

☐ Yes

☐ No

How much would you be willing to accept to replace your mug with a new identical one?

Please state the minimum USD amount (integers only) you'd accept on top of the new mug. In case there's no such amount, please enter "9999."

How much would you be willing to pay to replace your mug with a new identical one?

Please state the maximum USD amount (integers only) you'd add on top of your mug.

Did you pay to acquire the mug?

☐ Yes

☐ No

Do you remember/know how much did the mug cost?

☐ Yes

☐ No

How much did the mug cost? Please enter the \$ amount below.

Can you guess how much did the mug cost? Please enter the \$ amount below. If you don't know at all, enter "9999."

For how long (as of today) have you owned your mug?

Please type your answer in years (e.g., if you own it for 6 months, type 0.5). In case you don't remember, please enter "9999."

Was your mug custom-made?

☐ Yes

☐ No

Is your mug occupation-related (e.g., got it from your workplace)?

☐ Yes

☐ No

Is your mug related to a significant other (e.g., got it from a family member)?

☐ Yes

☐ No

Do you use your mug often?

☐ Yes

☐ No

How would you describe the experience that made your mug personally significant?

☐ Positive

☐ Negative

☐ Both positive and negative

☐ NA

Which of the following is true regarding how you came to possess the mug?

☐ Gift

☐ Prize

☐ Souvenir (e.g. bought on a trip)

☐ Self-purchased

☐ Self-made

☐ Inherited (or borrowed)

☐ NA

**Figure A13 Study 2 - Follow-up Questionnaire.**

Would you be willing to trade your hat for the same exact hat but new?

☐ Yes

☐ No

How much would you be willing to pay to replace your hat with a new identical one?

Please state the maximum USD amount (integers only) you'd add on top of your hat.

How much would you be willing to accept to replace your hat with a new identical one?

Please state the minimum USD amount (integers only) you'd accept on top of the new hat. In case there's no such amount, please enter "9999."

Did you pay to acquire the hat?

☐ Yes

☐ No

Do you remember/know how much did the hat cost?

☐ Yes

☐ No

Can you guess how much did the hat cost? Please enter the \$ amount below. If you don't know at all, enter "9999."

How much did the hat cost? Please enter the \$ amount below.

For how long (as of today) have you owned your hat?

Please type your answer in years (e.g., if you own it for 5 months, type 0.5). In case you don't remember, please enter "9999."

Was your hat custom-made?

☐ Yes

☐ No

Is your hat occupation-related (e.g., got it from your workplace)?

☐ Yes

☐ No

Is your hat related to a significant other (e.g., got it from a family member)?

☐ Yes

☐ No

Do you use your hat often?

☐ Yes

☐ No

How would you describe the experience that made your hat personally significant?

☐ Positive

☐ Negative

☐ Both positive and negative

☐ NA

Which of the following is true regarding how you came to possess the hat?

☐ Gift

☐ Prize

☐ Souvenir (e.g., bought on a trip)

☐ Self-purchased

☐ Self-made

☐ Inherited (or borrowed)

☐ NA

**Figure A14 Study 3 - Follow-up Questionnaire.**

1. How would you describe your current mood?

Very negative | Negative | Neutral | Positive | Very positive

2. How much did each of the following considerations influence your decision about whether to sell your hat to us at different prices?

No influence | Extremely important influence

Sentiment, meaning, and/or significance

Original cost

Monetary profit

Hat's connection to other people

Our feeling about the decision

Related memories and/or associations

Design, looks, features, and/or fit

Cost of replacement

3. How would you rate the intensity of your emotional connection to your hat?

Not emotionally connected | Emotionally connected

4. What made you wear that specific hat today (pick the most important factor)?

☐ It is my default option

☐ I chose at random

☐ It was my only option

☐ Its physical characteristics (e.g., design and looks)

☐ Its sentimental value

☐ I knew I might be asked to sell it, and chose a hat I didn't mind parting with

☐ It was the easiest to access

☐ Its functionality (e.g., warmth)

☐ Other (please specify):

5. Did you pay to acquire the hat?

☐ Yes

☐ No

☐ Not applicable

6. Do you remember/know how much the hat costed you to buy?

☐ Yes

☐ No

☐ Not applicable

7. How much did the hat cost? Please enter the \$ amount below:

8. Can you guess how much the hat originally costed? Please enter the \$ amount below. If you don't know at all, enter "9999."

9. For how long (as of today) have you owned your hat?

Please type your answer in years (e.g., "I've had it for 5 months, type 0.5). In case you don't remember, please enter "9999."

10. Was your hat custom-made?

☐ Yes

☐ No

11. Is your hat occupation-related (e.g., got it from your workplace)?

☐ Yes

☐ No

12. Is your hat related to a significant other (e.g., got it from a family member)?

☐ Yes

☐ No

13. Do you use your hat often?

☐ Yes

☐ No

14. How would you describe the experience that made your hat meaningful to you?

☐ Positive

☐ Negative

☐ Mixed (both positive and negative)

☐ There is no such experience

☐ The hat is not meaningful to me

15. Which of the following is true regarding how you came to possess the hat?

☐ Gift

☐ Inherited (or borrowed)

☐ Self-purchased

☐ Souvenir (e.g., bought on a trip)

☐ Self-made

☐ Price

☐ Other (please specify):

16. When you wear your hat, does it tend to be a special occasion?

☐ No

☐ Yes

☐ Sometimes

☐ Not applicable (e.g., never wear my hat)