

RESEARCH REPORT

What makes people happy? Decoupling the experiential-material continuum

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Abstract

Extant literature suggests that consumers derive more happiness from experiences (e.g., vacations) than from material possessions (e.g., furniture). However, this literature typically pits material against experiential consumption, treating them as a single bipolar construct of their relative dominance: more material or more experiential. This focus on relative dominance leaves unanswered questions regarding how different levels of material and experiential qualities each contribute to happiness. Four preregistered studies ($N = 3,288$), using hundreds of product categories, measured levels of material and experiential qualities using two unipolar items. These studies investigate recalled, evoked, and anticipated happiness. Results show a more nuanced view of the experiential advantage that is critical for future research and consumer theory: material and experiential qualities both have positive relationships with happiness. Further, there is no inherent trade-off between experiential and material qualities: consumers can enjoy consumption that is high on both (e.g., swimming pools and home improvements).

KEYWORDS

emotion, experiential, happiness, material, well-being

INTRODUCTION

How can consumers buy happiness? One prominent recommendation from consumer research is to pursue experiences, because experiential purchases yield greater happiness than material purchases do (Gilovich et al.,

2015; Van Boven & Gilovich, 2003). First defined by Van Boven and Gilovich (2003), experiential purchases are made with “the primary intention of acquiring a life experience—an event or series of events that [the individual] personally encounters or lives through,” while material purchases are made with “the primary intention

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of acquiring a material possession—a tangible object that [the individual] obtains and keeps in [one's] possession” (p. 1194). Several psychological explanations have been suggested for why purchases like concert tickets, vacations, and restaurant meals make us happier than our furniture, televisions, and jewelry. These theories range from experiences being more central to one's identity (Carter & Gilovich, 2012) to experiences exhibiting slower hedonic adaptation than possessions (Nicolao et al., 2009).

At the same time, this literature has a notable limitation: it conceptualizes material-experiential consumption as a bipolar construct. Researchers studying this “experiential advantage” typically treat material and experiential qualities as opposite ends of a single continuum. This approach has benefits: it is convenient and simple, and people can reasonably classify many goods as being “more material” or “more experiential.” At the same time, this single dimension only allows for studying the relative dominance of material versus experiential qualities, implying the two negate each other. This approach leaves important research questions about their absolute levels unanswered. How do different levels of material and experiential qualities separately relate to happiness, and how do they combine to contribute to happiness? Does the material quality of a swimming pool mean it brings less happiness than an immaterial beach vacation? Is a cruise superior to a snowmobile, and a pedicure more enjoyable than a new gadget?

We advocate for answering these questions by treating material and experiential qualities as separate, unipolar dimensions rather than a bipolar construct. This simple change enables researchers to capture the unique contributions of material and experiential qualities to happiness, rather than only having a composite measure of their relative strength. In turn, this change can provide a more comprehensive understanding of how consumers should spend their money to bring happiness. To test the viability of this change, we conducted two preregistered studies ($N = 1,784$) plus two additional preregistered studies reported in the Appendix S1 ($N = 1,504$) measuring material and experiential qualities on unipolar

scales for hundreds of naturally occurring consumption categories. Through doing so, we unpack the nature of each quality when the two are allowed to vary freely, and observe how each contributes to anticipated, evoked, and recalled happiness. Results reveal that material and experiential qualities are only modestly negatively correlated, and both positively and additively contribute to happiness. Our results demonstrate a more nuanced view of the experiential advantage, pointing to key takeaways for consumers and marketers.

THEORETICAL BACKGROUND

Past research has primarily studied the effect of the relative strength of experiential and material qualities on happiness. It has done so through manipulation (e.g., recall an experiential/material purchase, read about experiential/material purchases; Gilovich et al., 2015), or through bipolar measurement, such as using “completely experiential/material” as endpoints, with “equally experiential and material” in the middle (e.g., Nicolao et al., 2009; Tully & Sharma, 2018). By collapsing experiential and material qualities into one continuum of relative strength, a bipolar construct leaves open research questions, discussed next.

We are not the first to critique the bipolar construct (see Table 1). However, whereas previous papers discussing a two-construct view are mainly conceptual or only address a specific type of mixed consumption (e.g., Guevarra & Howell, 2015), the current research is the first to systematically, empirically test the two as unipolar constructs across many ecologically valid consumption categories. In this unipolar framework, material and experiential qualities refer to two distinct intentions consumers may have for a purchase. Therefore, the opposite of high material intentions is not high experiential intentions, but instead the absence of material intentions. The same is true for experiential intentions, resulting in a two-dimensional space. For example, an offering may be high in material intention (e.g., a shirt) or low in it (e.g., a bottle of vitamins), even when both are

TABLE 1 Examples of past criticism of the bipolar construct

Example citations	Critique
Carter and Gilovich (2014); Gilovich and Gallo (2020); Gilovich et al. (2015); Van Boven (2005)	The boundaries between material and experiential endpoints are fuzzy, and mixed goods exist. “The distinction between material and experiential is not always clear-cut, as some purchases are both undeniably a material good and something that serves as a vehicle for experience” (Gilovich et al., 2015, p. 152)
Schmitt et al. (2015)	The material-experiential paradigm is a “false dichotomy”; the two are not “opposite ends of the same continuum,” instead representing different factors (p. 167)
Guevarra and Howell (2015)	There are meaningful mixed goods that consumers “have in order to do.” These experiential products “fall between material items and life experiences” but contribute to well-being just as much as life experiences do
Carter et al. (2012); Sääksjärvi et al. (2016)	There are experiences that have material components and material possessions that have experiential components

low in experiential intentions. Similarly, highly experiential purchases may be high in material intentions (e.g., a backyard firepit) or low in material intentions (e.g., a snorkeling trip). Therefore, there are four types of mixes (high–low, low–high, high–high, low–low). Notably, these low–low mixes, such as insurance or software, do not offer substantial material or experiential benefits and may be purchased for other reasons (e.g., functionality and necessity). A bipolar framework (a) points to interesting distinctions between different types of material-experiential combinations, (b) yields new insights about consumer happiness, and (c) opens interesting directions for future research. We summarize these key advantages in Table 2 and discuss each next.

First, how does an offering having high or low materialness affect happiness? That is, when high-materialness is not inherently defined as low-experientialness, does it still decrease happiness? Whereas the positive effect of experiential consumption is well-established, there is more uncertainty about whether material consumption positively or negatively contributes to happiness when it is not conceptualized as necessarily subtracting from experientialness. Past research has provided insights in both directions: material purchases such as clothes or shoes may yield disutility (e.g., being perceived as materialistic; Van Boven et al., 2010; promoting loneliness; Pieters, 2013); alternatively, they can have important positive benefits. For example, material qualities are less ephemeral (see Carter & Gilovich, 2010, p. 157), remind people of accomplishments (Goodman et al., 2016), and are more visible for status signaling (Mandel et al., 2006). The potential upsides of materialness on happiness (e.g., tangibility and publicity) are unidentifiable in the bipolar relative-dominance conceptualization where material contributions are forced to dilute pure experiential contributions.

Second, how much happiness can “mixed goods” (i.e., goods that have both material and experiential qualities) bring? In real life, many consumption options have both components. In a bipolar framework, mixed goods are forced to have “intermediate” contribution to happiness,

midway between material and experiential. However, the question remains whether these mixed “middle” options actually provide middling happiness. Guevarra and Howell (2015), for example, examined one type of mixed goods—those consumers “have in order to do”—and found them to provide as much happiness as experiential goods. Extending this work, the rich landscape of consumption options points to a broad continuum of material and experiential mixes. Some mixes are more parallel rather than hierarchical goal combinations (e.g., a sports car can be thought of as “to have *and* to do,” rather than “to have in order to do”). Further, some mixes are low on both qualities—some purchases (e.g., a breakfast sandwich) involve neither an intention to acquire a life experience nor an intention to acquire a material possession. On a bipolar scale, these are conflated with “high-high” mixes. However, the two may bring very different happiness.

When studying “mixed goods” using separate measures of material and experiential qualities, it is also worthwhile to examine their relationship with one another (i.e., the extent to which they are correlated). If material and experiential qualities are highly negatively correlated, it would be difficult to have instances of consumption opportunities high on both. Under this relationship, highly experiential consumption would automatically have low material qualities, and “mixed goods” would be those middling on both material and experiential qualities. On the other hand, if the two qualities are only moderately correlated, then all combinations are possible, including options that are high or low on both. Therefore, we also examine, across a wide range of consumption categories, whether material versus experiential qualities tend to be highly negatively correlated or vary more independently.

Our results reveal two robust patterns: first, material and experiential qualities are only modestly negatively correlated, suggesting the two qualities have much room to vary separately from each other, and many combinations of their values are possible (and in fact frequent). Second, critically, we demonstrate that both qualities

TABLE 2 Advantages of the unipolar versus bipolar approach

Limitations of the bipolar approach	Advantages, solutions, and new research questions offered by a unipolar approach
Cannot examine potential independent impacts of each dimension on well-being	Isolate independent contribution of each dimension to well-being
Conflates market offerings that are high on both dimensions with those low on both dimensions (i.e., both are in the middle), hiding potential benefits of mixed goods	Can examine two-dimensional space of offerings, teasing apart those high versus low on both dimensions
Forces a trade-off between experiential and material qualities, where pursuing one means sacrificing the other	Examines actual trade-off between two dimensions, if present
Forces all differences between an experience and a material possession to exist along one continuum	Enables testing of potentially different effects of various properties (e.g., sociality and duration) on material versus experiential dimensions
Focuses research onto offerings that maximize the difference between experientialness and materialness	Enables much wider range of market offerings to be studied

positively contribute to happiness, and their effects are additive (rather than mutually diluting). Hence, mixed consumption can yield high happiness.

Critical for future research and everyday practice, our results also demonstrate a more nuanced interpretation of the “experiential advantage.” While both qualities are positively related to happiness, the effect of experiential qualities was indeed significantly stronger (i.e., its coefficient is significantly larger than that of material qualities). Therefore, the experiential advantage advice is correct in that if consumers must choose between material and experiential qualities, they should choose experiential consumption. However, when consumers can seek both qualities, such as when “high-material high-experiential” mixed consumption is available, it can provide as much as or even more happiness than purely experiential consumption. This addendum is contrary to previous advice from a bipolar framework that suggests pure experiential consumption makes the greatest contribution to happiness, and that adding material qualities would dilute and detract from happiness. In sum, unless forced to choose between the two, consumers need not shy away from pursuing material consumption; instead, one should seek to maximize their combination through a wide variety of consumption opportunities where increasing one does not decrease the other.

STUDY 1: RECALLED HAPPINESS FROM CONSUMPTION

To examine the relationship between material and experiential qualities and consumer happiness, Study 1

used the recall paradigm from Van Boven and Gilovich (2003). Participants recalled past purchases and reported their happiness with each. They then rated these purchases either with a bipolar material-experiential measure or with unipolar measures. We tested whether these measures yield divergent conclusions about consumer happiness.

Method

Participants

Participants were 598 Amazon Mechanical Turk Workers ($M_{age} = 44.34$, 51.67% female). See https://osf.io/xfmqs/?view_only=8dfad3c4236c47b5b8fa0554d99089fb for both studies' surveys, data, preregistrations, and analysis codes. The Appendix S1 provide additional study details.

Procedure

Participants recalled four recent purchases they made that increased their happiness. Participants listed, for example, earphones, a blanket, a Fitbit, clothes, an iPhone, a Disney + subscription, football tickets, vacations, a bicycle, a laptop, a car, a television, a chair, and a barbell.

Participants were then randomly assigned to rate each of their purchases with either a bipolar measure ($n = 292$) or two unipolar measures ($n = 306$). The unipolar measures used the same definition of material and experiential qualities as the bipolar measure, but used separate items, in counterbalanced order (Table 3).

TABLE 3 Unipolar and bipolar material and experiential measures

Measure	Question text	Scale endpoints	Study 1 mean (SD)	Study 2 mean (SD)
<i>Bipolar material/experiential</i> (Source: Van Boven & Gilovich, 2003, p. 1194)	An experiential purchase is one where the primary intention is acquiring a life experience—an event or series of events that you personally encounter or live through. A material purchase is one where the primary intention is acquiring a material possession—a tangible object that you obtain and keep in your possession. To what extent is each listing below an experiential versus material purchase?	1 = Completely Experiential, 4 = Equally experiential and material, 7 = Completely Material	4.99 (2.03)	4.75 (2.02)
<i>Unipolar experiential</i>	To what extent is each listing below an experiential purchase, one involving an intention to acquire a life experience—an event or series of events that you personally encounter or live through?	1 = Not at all, 7 = Very much	3.44 (2.23)	3.23 (2.13)
<i>Unipolar material</i>	To what extent is each listing below a material purchase, one involving an intention to acquire a material possession—a tangible object that you obtain and keep in your possession?	1 = Not at all, 7 = Very much	5.41 (2.05)	4.72 (2.26)

Participants then reported their happiness with each purchase using measures adapted from Nicolao et al. (2009), “When you think about this purchase, how happy does it make you?” (1 = Not Happy, 4 = Moderately Happy, 7 = Very Happy) and “How much does this purchase contribute to your happiness in life?” (1 = Not at all, 4 = Moderately, 7 = Very Much). These two questions correlated highly ($r_s > 0.7$) and were averaged into one happiness index per purchase.

To contend with natural variation in the price of goods recalled, participants then answered, “Approximately how much did each purchase below cost, in dollars?” ($Mdn_{unipolar} = \$35$, $Mdn_{bipolar} = \$40$). This control was included as a covariate in all analyses, as preregistered; we report results without this control, among other analyses, in the Appendix S1. Finally, participants reported demographic information and responded to a bot check and an instruction check.

Results

We analyze the results with random intercepts per participant, as all participants have four purchase observations.

Relationship between the material and experiential unipolar measures

Using *rmcorr* to account for the within-subject nature of the data (Bakdash & Marusich, 2017), the unipolar material and experiential scores' correlation was $r = -.212$ (95% CI [-0.273, -0.149]). When not accounting for participant (treating each purchase independently, $N = 1,224$), the raw correlation was $r = -0.170$ ($p < 0.001$). Thus, unipolar material and experiential scores were between weakly and moderately negatively correlated, falling below a level that might justify making them two ends of the same scale (Cohen, 1988; John & Benet-Martinez, 2000).

Relationship with recalled happiness

Replicating past research, the bipolar measure negatively predicted happiness ($B = -0.227$, $t = -6.70$, $p < 0.001$), such that more experiential (vs. material) purchases brought greater happiness. However, when regressing the happiness index onto the unipolar measures, both the experiential ($B = 0.485$, $t = 12.41$, $p < 0.001$) and the material ($B = 0.078$, $t = 2.13$, $p = 0.034$) measures positively predicted recalled happiness. The results were similar when excluding the cost covariate or including an interaction term between the experiential and material measures. Material qualities had a positive, albeit smaller, effect on happiness; and

material and experiential effects were additive rather than mutually negating.

We also examined the predictive strength for happiness of the bipolar and unipolar measures. As presented in the Appendix S1, the unipolar measures explained more variance in happiness (.246) than the bipolar measure (.111), suggesting significant predictive information was lost when two separate variables were replaced by a composite of them in the bipolar scale. We find similar results in Study 2.

Highest-happiness purchases

As an illustration of the regression insights, we also examined the purchases that brought participants the greatest happiness. In this study, 574 purchases (24%, $n_{unipolar} = 318$) received the highest possible happiness score (7/7 on both happiness measures). Figure 1 shows where these highest-happiness purchases lie in the four quadrants formed by the two unipolar measures based on scale-midpoints. As purchase ratings were all integers, some scores fell exactly at scale midpoints (4/7), which we classify as a separate “midpoint” category (18% of highest-happiness observations). High-Experiential-Low-Material purchases (e.g., pedicure, hotel room, a new puppy, plane tickets, and digital video game) constituted 10% of highest-happiness observations. Interestingly, 28% of highest-happiness purchases were High-Material-Low-Experiential (e.g., blue jeans, winter gear, computer monitor, chair, sweater, jewelry box, and blankets). Mixed goods that were simultaneously high on both dimensions (e.g., webcam, camper, paddleboard, children's toys, iPhone, and smart watch) had the greatest share of maximal-happiness purchases at 40%, while few (4%) were Low-Low mixed goods (e.g., feta cheese, garden seeds, and avocados). See Table S1 for further analyses.

Discussion

When experiential and material qualities are captured separately, both can positively and additively contribute to retrospective happiness from consumption. A large sampling of real purchases identified many instances in which high-material-high-experiential mixed goods brought maximal happiness to consumers. This insight could not be gleaned from a bipolar measure. Further, a large number of the happiest purchases were material goods (high on material low on experiential). These goods' potential for high contribution to happiness also could not arise from the bipolar measure that forces material contributions to detract from experiential contributions.

Importantly, our results not only support but also provide critical addendums to past conclusions of an

experiential advantage. The coefficient for experiential qualities was indeed larger than that of material qualities. Therefore, if one is forced to choose between the two (consistent with a bipolar conceptualization of relative strength), one should choose experiential consumption to maximize happiness. However, conceptually as well as empirically, our data show that a trade-off between them is not inherent or necessary. They are only mildly negatively correlated, showing that in actual consumption when consumers fulfilled one intention, they did not always sacrifice the other. Thus, “high-high” products appear often and can provide high happiness.

Supplementary Study 1 (SS1) conceptually replicated Study 1 and addressed two shortcomings. First, whereas Study 1 specified recalling purchases that made people happy, SS1 participants recalled “a recent purchase” to widen the scope of potential purchases. Second, while Study 1’s happiness measure captures “happiness from the purchase”, SS1 employed a more general happiness measure (“Now, how happy do you currently feel?”) after an evoked experience (e.g., Lerner & Keltner, 2001; Roseman et al., 1990). SS1 also utilized methods to reduce common method bias (Podsakoff et al., 2003), including scale switching, question ordering, and filler questions. SS1 revealed results consistent with Study 1.

Next, Study 2 conceptually replicates Study 1 and SS1’s findings using another common paradigm from the

experiential advantage literature: anticipated happiness from experimenter-provided consumption options.

STUDY 2: ANTICIPATED HAPPINESS FROM GIVEN CONSUMPTION OPPORTUNITIES

Study 2 asked participants to rate the experiential and material qualities of predetermined sets of goods/services (e.g., Tully & Sharma, 2018) and report their anticipated happiness from each (Carter & Gilovich, 2010; Schkade & Kahneman, 1998). This methodology allows us to control for the purchase. Compared to previous literature, we tested a substantially wider range of stimuli (370 items) to increase generalizability. Specifically, to capture the rich diversity of consumption opportunities, we drew items from three sources: prior literature, magazine ads, and all products reviewed on the Consumer Reports website.

Method

Participants

Participants were 1,186 Amazon Mechanical Turk Workers ($M_{age} = 37.97$, 51.69% female).



FIGURE 1 Heat Map of Purchases Bringing the Greatest Happiness, Study 1. Plotted numbers denote how many purchases appeared in each cell. This Figure includes all purchases that had happiness ratings at ceiling, that is, 7 out of 7 on both measures, in the unipolar condition

Procedure

Participants saw a random subset of 30 of 370 consumption options (products/services/events). Each good was rated by 69–126 participants, for a total of 35,580 observations. The goods included stimuli from prior literature (Tully & Sharma, 2018; Van Boven & Gilovich, 2003), plus, as a wide snapshot of popular consumption, all products and services (with a few exclusions; see Appendix S1) that appeared in the advertisements and texts of the following popular consumer and lifestyle publications: *Consumer Reports'* website (every product reviewed as of July 2019), *Travel and Leisure* (May 2019), *Martha Stewart Living* (July/August 2019), and *Real Simple* (July 2019; see Appendix S1 for the full list of goods/services). We included all products and services mentioned therein to sample a wide set of naturally appearing options.

To compare the relative efficacy of bipolar versus unipolar measures, participants were randomly assigned to one of two conditions: bipolar or unipolar, and reported experiential and material qualities of each stimulus with the measures from Study 1.

Participants then reported their anticipated happiness from each good: “For each listing below, please indicate how happy having and/or experiencing it would make you feel” (1 = Very Unhappy, 5 = Neither happy nor unhappy, and 9 = Very Happy). Next, participants indicated any goods they were unfamiliar with. Finally, participants reported demographic information and completed an attention check.

Results

The average for each item's unipolar-material, unipolar-experiential, and bipolar ratings, and plots of the 370 goods by unipolar values, are in the Appendix S1. The regressions below used random intercepts for participants and for goods, and the independent variables are standardized (Judd et al., 2012). Additional analyses with each good's price range (coded by hypothesis-blind research assistants) and participants' income as controls are also in the Appendix S1.

Relationship between the material and experiential unipolar measures

Again, the unipolar-material and unipolar-experiential measures were only modestly negatively correlated (repeated-observations correlation: $r = -.240$, 95% CI $[-.254, -.226]$; raw correlation: $r = -0.171$, $p < 0.001$; see Appendix S1 for higher-order relationships and plots). This result again suggests that material and experiential qualities may not be as strongly negatively correlated as a bipolar framework would imply, indicating they may

not be valid as two ends of the same construct (Cohen, 1988; John & Benet-Martinez, 2000).

Relationship with anticipated happiness

The bipolar material-experiential rating again negatively predicted anticipated happiness, replicating prior research: people expected more experiential goods to make them happier ($B = -.147$, $t = -9.77$, $p < 0.001$). However, when material and experiential qualities were allowed to vary separately (unipolar measures), both experiential ($B = 0.614$, $t = 40.86$, $p < 0.001$) and material ratings ($B = 0.356$, $t = 22.97$, $p < 0.001$) positively predicted happiness. Exploratory analyses reveal similar results when including an interaction term between experiential and material measures.

Highest-happiness consumption options

As an illustration of the regression insights, we examined which of the 370 goods were anticipated to provide the greatest happiness. We tabulated the top 10% of goods in terms of anticipated happiness (all averaged above 7 on the 9-point happiness scale). Figure 2 shows where these goods lie in the four quadrants formed by the two unipolar measures based on scale-midpoints. High-Experiential-Low-Material purchases (e.g., private dinner events, live music, and hiking trails) constituted 32% of these highest-happiness observations, whereas 43% were High-Material-Low-Experiential goods (e.g., pillows, gold, and central air conditioning), and 24% were High-High mixed goods (e.g., swimming pools and vacation homes). None were low-low mixes. Thus, similar to Study 1's results, a large proportion of the highest-happiness-inducing consumption options were High-High mixed goods, as well as High-Material-Low-Experiential goods.

Discussion

Study 2 used a stimuli-rating paradigm with hundreds of consumption options, spanning diverse product categories, to provide convergent evidence that material and experiential qualities are positively and additively related to anticipated happiness.

An additional Supplementary Study 2 (SS2) conceptually replicated Study 2 but used a three-cell between-subjects design where participants rated only one of: experiential qualities, material qualities, or anticipated happiness. This completely separated the measures to avoid self-generated correlations in sequential questions and address common methods bias (Feldman & Lynch, 1988; MacKenzie & Podsakoff, 2012; Podsakoff et al., 2003). SS2 found results consistent with Study 2: material

and experiential qualities both were positively predictive of happiness.

GENERAL DISCUSSION

Two preregistered studies ($N = 1,784$) and two preregistered supplemental studies ($N = 1,504$) over a wide range of product categories examined the relationships between material and experiential consumption and happiness. Our studies found consistent support for treating material and experiential qualities as separate constructs rather than collapsing them into a single bipolar construct. They robustly demonstrate that (a) material and experiential qualities are only modestly negatively correlated, and hence each can independently influence happiness; and (b) both material and experiential qualities positively contribute to happiness, and their effects are additive. Notably, consumption opportunities high on both material and experiential qualities, such as smart watches, hot tubs, and paddleboards, often provide some of the highest levels of happiness. Such insights require

an adjustment from the bipolar framework in which pure experiences are thought to provide maximum happiness.

Our results provide a deeper and more complete understanding of the “experiential advantage” in happiness. In recalled, evoked, and anticipated happiness, experiential qualities indeed more strongly predicted happiness than did material qualities. This supports the notion of an experiential advantage, whereby if one must choose between the two, one should choose experiences. However, consumers do not seem to experience material and experiential qualities as a trade-off (one or the other), as their occurrences are only mildly negatively correlated. Thus, the material-experiential distinction is better conceptualized as two dimensions whose contributions mutually add to, rather than detract from, happiness.

Additionally, the proposed unipolar approach has implications for previous findings and opens multiple avenues of future research, summarized in Table 4. Future research should investigate mixed goods with various levels of material and experiential qualities, which are lumped into the middle of a bipolar scale but behave quite differently on unipolar scales. Their

Highest-Happiness Items: Items Scoring in the Top 10% on Happiness

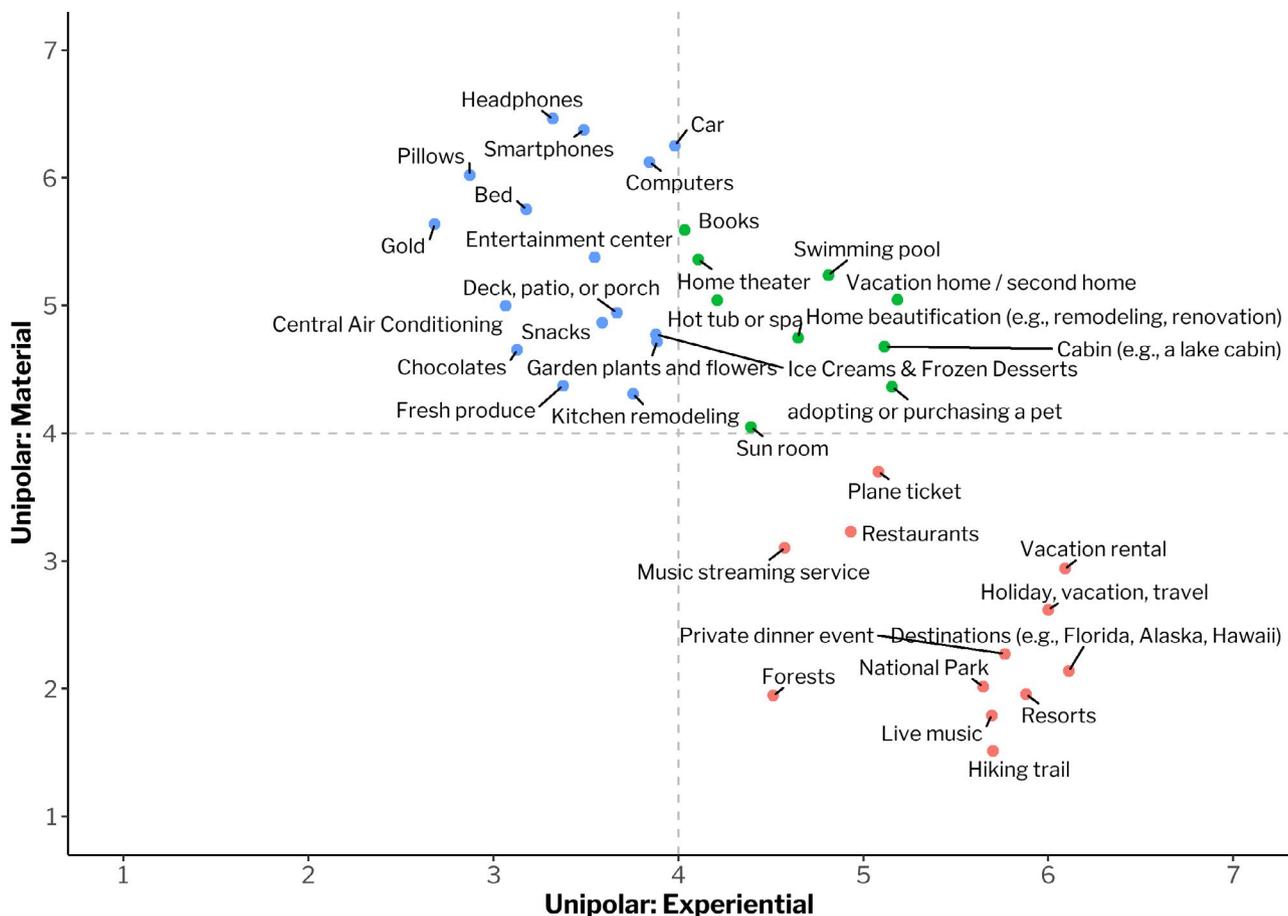


FIGURE 2 Goods with Highest Anticipated Happiness (Top 10%), Study 2. In this Figure, we plot the top 10% of goods receiving the highest average anticipated happiness scores in a Unipolar Material-Experiential space

TABLE 4 Reinterpretation of findings and possible future research with a unipolar approach

Relevant citations	New questions
Carter and Gilovich (2012); Molouki and Bartels (2017)	To what extent do experiential versus material qualities contribute to different facets of identity (those with different centrality to the self; e.g., morality, preferences, and memory)?
Carter and Gilovich (2010); Goodman et al. (2016)	Potential downsides to high experientialness: Are material contributions to happiness more durable and longer lasting while experiential contributions more ephemeral but special? Can consumption options be changed to provide both fleeting special bliss and material durability? How does the visibility of each quality (and downstream relation to happiness) change in light of social media?
Chan and Mogilner (2017); Galak et al. (2016)	How do material and experiential characteristics relate to connection, social utility, and joy from gift-giving (and gift-receiving) when measured separately? Do the two qualities differentially contribute to the lasting joy from a gift (versus momentary joy at the moment of exchange)?
Johnson et al. (2007)	How do mixtures of experiential and material qualities affect memory? Do people recall more flaws depending on the materialness of the market offering?
Matz et al. (2016)	How does spending on material, experiential, high-high, and low-low transactions contribute to consumers' overall well-being? Does it depend on their personality, and are certain dimensions of personality more tied to joy from experiential versus material qualities?
Nicolao et al. (2009); O'Brien (2019)	How do different mixtures of experiential and material qualities affect hedonic adaptation? How do mixtures of materialness and experientialness affect calibration of expected versus experienced happiness?
Van Boven et al. (2010)	Are individuals' impressions of those who flaunt their experiences or material possessions driven more by material or experiential dimensions?
Waterman (1993)	When do experiential versus material qualities contribute to hedonic versus eudaimonic happiness?

durability provides the potential for long-term happiness and meaning (Goodman et al., 2016), a premise worth investigating empirically. Further, what role do marketers play, from promotional strategies to fostering experiential consumption communities? Moreover, marketers should give “high-high” goods more attention through integrating experiences into material possessions (e.g., a digital photo frame) instead of pivoting away from physical goods altogether (e.g., Groupon; Rutherford 2020). Adding material qualities to an offering may differently affect eudaimonic versus hedonic happiness (Waterman, 1993), and such differences may depend on one's personality (Matz et al., 2016). Finally, we note that the current results are correlational; future work should expand on the present findings through experimental manipulations of each dimension.

In sum, we recommend that future material-experiential research, whether in pursuit of exploring antecedents of happiness, or integrating the distinction into other contexts (per Table 4), use unipolar items to measure material and experiential qualities. Much like the study of mixed emotions, which found that happiness and sadness can meaningfully co-occur (Larsen et al., 2001), material and experiential properties can meaningfully co-occur and produce different mixes worthy of study. An accurate conceptualization of how material and experiential qualities independently operate as well as combine can hopefully lead to a richer understanding of a valuable question: “What makes people happy?”.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website. Supplementary Material

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Supplemental Materials for “What Makes People Happy? Decoupling the Experiential-Material Continuum”

1. Additional Study Details – pages 2-3
2. Additional Analyses and Figures – pages 4-13
3. Analyses of Model Fit – pages 14-15
4. List of Market Offerings Rated in Study 2 – pages 16-30
5. Supplemental Studies – pages 31-36

Additional Study Details

Study 1

We collected 604 Amazon Mechanical Turk Worker responses for \$0.40 compensation prior to the preregistered exclusions. See <https://aspredicted.org/blind.php?x=2hm5y2> for the preregistration.

In addition to the two happiness items we used in this study, Nicolao et al. (2009) also included a third regret measure. However, a pilot study we conducted illustrated that this item did not hold well together with the other two happiness items, so we did not include it in this study.

Study 2

We collected 1,517 Amazon Mechanical Turk Worker responses for \$0.40 compensation prior to the preregistered exclusions. See <https://aspredicted.org/blind.php?x=jd7t89> for this study's preregistration.

Prior to running this study, we removed goods of three specific categories: medical or clinical needs (e.g., pharmaceuticals) as they are not relevant for non-patients, goods specific to baby and pet care (e.g., diapers; pet food) as they are bought for dependents, and goods identified as unknown in a pretest by > 25% of participants (e.g., string trimmer). Below, we list the items we excluded from the main study. All other goods mentioned resulted in the 370 goods in the study.

Excluded items:

- Adult diapers
- Aircraft share
- Baby bathtubs
- Baby food
- Baby monitors
- Bassinets
- Breast pumps
- Cat litter
- Crib bedding
- Crib mattresses
- Cribs
- Decking
- Diaper bags
- Diapers
- Dog food
- Night market
- Nursing bras
- Pharmaceutical drugs
- String Trimmers
- Strollers
- Summer camp
- Tent trailer

Minor Deviations from Preregistrations: Study 1

Minor, unintentional deviations from the pre-registration in Study 1 occurred:

1. We did not preregister standardizing the unipolar scales for interpretability.
2. We did not preregister taking the natural log of cost (or replacing cost values for natural log of 0) but later had to take this step due to the steeply skewed distribution of cost in the data.

Minor, unintentional deviations from the pre-registration in Study 2 occurred:

1. The happiness scale included nine points rather than 7 (this was a typo).
2. The preregistration stated there would be 21 items listed for the attention check, which was a typo. The proper attention check included 31 items (all 30 market offerings participants saw in addition to the correct answer of Oculus Go, which was not rated by any participants).
3. We also collected a measure assessing whether participants knew or did not know each market offering that they rated. As it was not mentioned in the pre-registration, these ratings were not used in our analyses, although participants only reported not knowing 2.97% of the offerings they rated, and excluding these does not change the results.
4. We did not preregister the multiple regression of happiness onto unipolar experiential qualities, unipolar material qualities, and their interaction; however, we include it as an exploratory analysis.
5. We did not preregister standardizing the unipolar scales for interpretability.
6. For the analysis in Web Appendix C, we did not preregister the multiple regression of happiness onto the linear unipolar terms with their quadratic terms.

Additional Analyses and Figures

STUDY 1: RECALL STUDY

Between-Subjects Differences on Recalled Happiness

As a check (and as expected, since purchases were recalled before rating scales were manipulated), the average happiness scores did not significantly differ between the bipolar and unipolar conditions (least-square means controlling for cost: $M_{\text{unipolar}} = 5.33$, $M_{\text{bipolar}} = 5.40$; $t = 0.78$, $p = .43$; without controlling for cost: $t = 0.62$, $p = .53$), suggesting that participants recalled similarly happiness-inducing items in both conditions.

Results Not Controlling for Cost, or Without Transforming Cost in Happiness Analyses

We find similar results without controlling for cost or when controlling for raw cost rather than log-transformed cost.¹ In the bipolar condition, the rating was negatively predictive of happiness without cost ($B = -.178$, $t = -5.09$, 95% CI $[-.247, -.109]$, $p < .001$) or with raw cost ($B = -.178$, 95% CI $[-.246, -.109]$, $t = -5.09$, $p < .001$). In the unipolar condition, when regressed together without cost, experiential ($B = .541$, 95% CI $[.462, .619]$, $t = 13.57$, $p < .001$) and material qualities ($B = .188$, 95% CI $[.117, .258]$, $t = 5.21$, $p < .001$) were both positively predictive of happiness. When regressed together with raw cost, they were still positively predictive of happiness (experiential: $B = .539$, 95% CI $[.461, .617]$, $t = 13.53$, $p < .001$; material: $B = .187$, 95% CI $[.116, .257]$, $t = 5.17$, $p < .001$). When regressing both measures and their interaction without cost, experiential ($B = .544$, 95% CI $[.465, .622]$, $t = 13.60$, $p < .001$) and material qualities ($B = .185$, 95% CI $[.114, .256]$, $t = 5.10$, $p < .001$) were positive while their interaction was nonsignificant ($B = .031$, 95% CI $[-.036, .098]$, $t = 0.91$, $p = .36$). When regressing both measures and their interaction with cost, experiential ($B = .543$, 95% CI $[.464, .621]$, $t = 13.55$, $p < .001$) and material qualities ($B = .184$, 95% CI $[.113, .255]$, $t = 5.08$, $p < .001$) were positive while their interaction remained nonsignificant ($B = .03$, 95% CI $[-.037, .097]$, $t = 0.88$, $p = .38$).

Results by Each Happiness Index Item

¹ We continue to transform the observation with a cost of \$0 to \$0.02. However, not doing this replacement—and instead excluding this observation from analyses—has no bearing on any of these results.

Item 1: “When you think about this purchase, how happy does it make you?”

When controlling for the natural log of cost and using random intercepts for subjects, the standardized bipolar measure negatively predicted happiness ($B = -.217$, 95% CI $[-.287, -.148]$, $t = -6.18$, $p < .001$). In the unipolar condition, the experiential measure positively predicted happiness ($B = .423$, 95% CI $[.342, .503]$, $t = 10.30$, $p < .001$) while the material measure only directionally positively predicted happiness ($B = .063$, 95% CI $[-.013, .139]$, $t = 1.64$, $p = .10$). The two conditions did not significantly differ ($t = 1.23$, $p = .22$).

Item 2: “How much does this purchase contribute to your happiness in life?”

When controlling for the natural log of cost and using random intercepts for subjects, the standardized bipolar measure negatively predicted happiness ($B = -.231$, 95% CI $[-.309, -.153]$, $t = -5.84$, $p < .001$). In the unipolar condition, the experiential measure positively predicted happiness ($B = .547$, 95% CI $[.461, .632]$, $t = 12.55$, $p < .001$) as did the material measure ($B = .099$, 95% CI $[.020, .179]$, $t = 2.45$, $p = .015$). The two conditions did not significantly differ ($t = 0.32$, $p = .75$).

Results When Regressing Happiness onto Experiential and Material Scores Separately

We also examine whether the results are similar in the unipolar condition when examining material and experiential scores separately instead of simultaneously. When only regressing happiness onto each unipolar scale alone (still controlling for natural logarithm of cost), the experiential rating positively predicts happiness ($B = .466$, 95% CI $[.391, .541]$, $t = 12.22$, $p < .001$), and the material rating did not significantly predict happiness ($B = -.028$, 95% CI $[-.102, .045]$, $t = -0.76$, $p = .45$). When regressed separately without controlling for cost, experiential ($B = .501$, 95% CI $[.424, .570]$, $t = 12.66$, $p < .001$) and material qualities ($B = .092$, 95% CI $[.018, .166]$, $t = 2.43$, $p = .016$) were positively predictive of happiness. When regressed separately with controlling for raw cost, experiential ($B = .5$, 95% CI $[.422, .578]$, $t = 12.62$, $p < .001$) and material qualities ($B = .091$, 95% CI $[.016, .165]$, $t = 2.39$, $p = .017$) were both positively predictive of happiness. Notably, while these simple effects potentially confound the impact of material and experiential qualities, and thus are not part of the focal preregistered analyses, we ran these analyses for completeness.

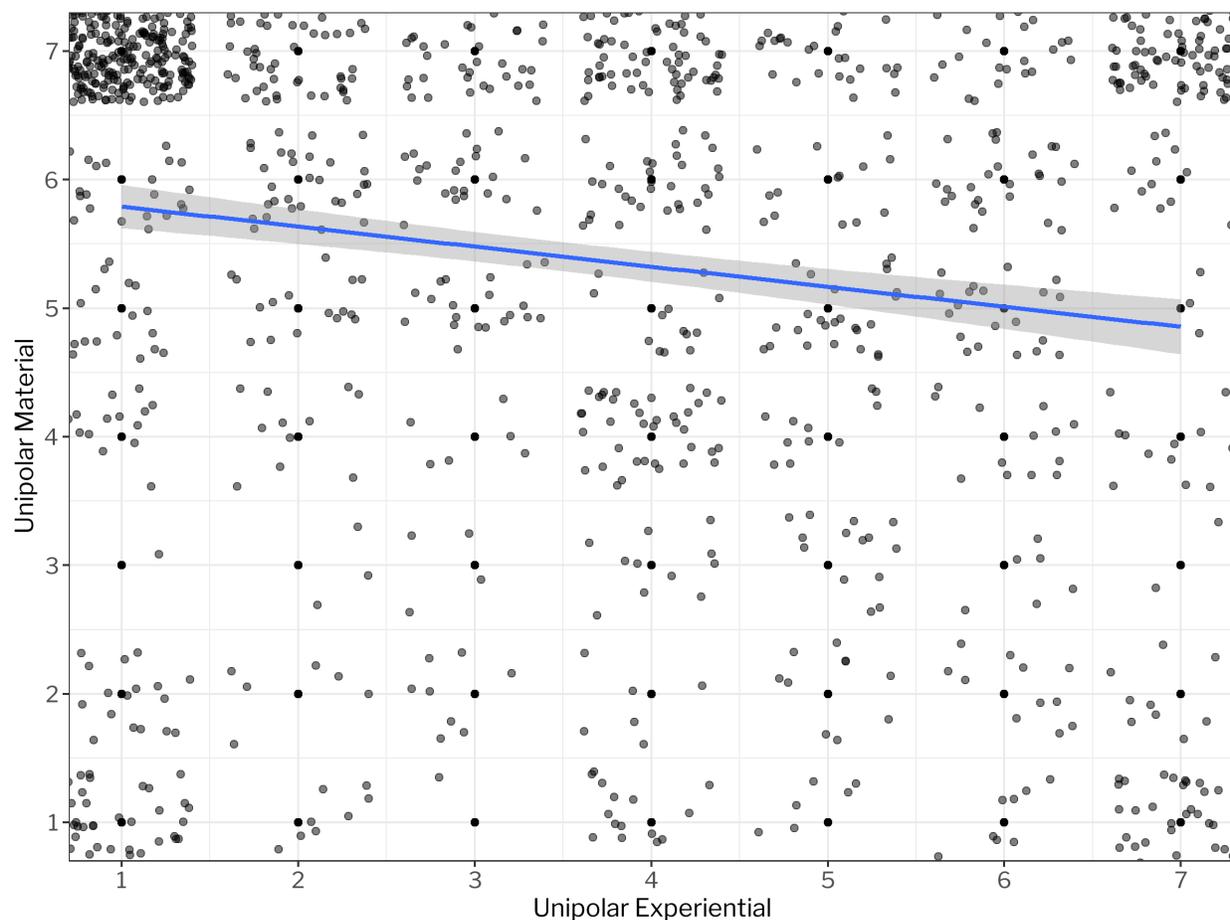
Controlling for Income, Age, Gender, and Native Language

We also examine the results from Study 1 when adding in controls for the income categories, age, whether the participant is female (1 if so, 0 otherwise), and native language (1 if English, 0 otherwise). When regressing the happiness index onto the standardized bipolar measure, the natural logarithm of cost, and these controls, the bipolar predictor remained significantly negative ($B = -.228$, 95% CI $[-.295, -.161]$, $t = -6.69$, $p < .001$). When regressing the happiness index onto the standardized unipolar measures, the natural logarithm of cost, and the demographic controls, the experiential ($B = .475$, 95% CI $[.398, .552]$, $t = 12.13$, $p < .001$) and material ($B = .077$, 95% CI $[.006, .149]$, $t = 2.12$, $p = .034$) predictors were still both significantly positive. When removing material scores from the regression, the experiential measure was still a positive predictor of happiness ($B = .457$, 95% CI $[.382, .532]$, $t = 11.93$, $p < .001$), and when removing experiential scores from the regression, the material measure was still a nonsignificantly negative predictor of happiness ($B = -.025$, 95% CI $[-.099, .049]$, $t = -0.67$, $p = .51$).

Plot Depicting the Correlation between the Unipolar Measures

Figure S.1 presents a scatterplot to visually depict the correlation between the unipolar experiential and material scales. As the individual datapoints fall at exact integers, a simple scatterplot of the unipolar datapoints is subject to overplotting. Hence we plot each individual datapoint with a random degree of small variation to the location of each point (between 0 and 40% of the true value) using the “geom_jitter” function in the R package ggplot. This jitter enables a visual examination of the density of the datapoints at each value of unipolar material and unipolar experiential levels. Further, a smoothed line is fit to the data (Unipolar_Material ~ Unipolar_Experiential). The plot reveals a negative correlation between the unipolar measures.

Figure S.1. Correlation plot of individual unipolar measures with 0-40% jitter, Study 1



An Alternative Way to Examine the Frequency of Purchases Bringing High Happiness

Below, we present a table that provides an alternative analysis yielding a similar perspective to the main text: high-high purchases were the most likely to bring high happiness.

Table S.1. Distribution of Purchases in Study 1.

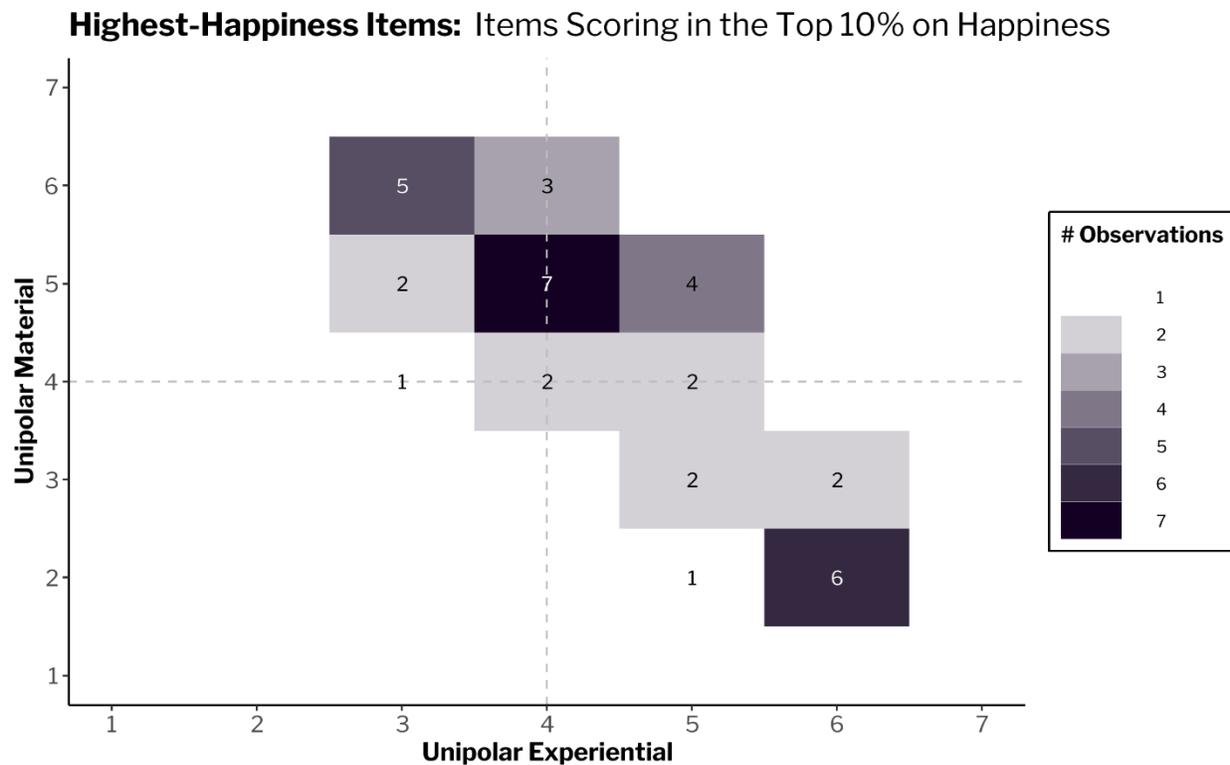
Category	Percentage of All Recalled Purchases that Fell into This Category	Within this Category, Percentage of Purchases Bringing the Highest Happiness (i.e., 7 out of 7)
Material	41%	17.75%
Experiential	8%	30.39%
High-High	22%	48.48%
Low-Low	7%	14.61%
Midpoint	21%	21.37%

STUDY 2: RATING STUDY

Heat Map of Highest-Happiness Offerings

Figure S.2 below presents a figure similar to that of Study 1 in the main text, showing a heat map of relative frequencies of purchases at each point within each quadrant, with values rounded to create a 7x7 grid (to mirror Study 1).

Figure S.2. Heat Map of Highest-Happiness Offerings



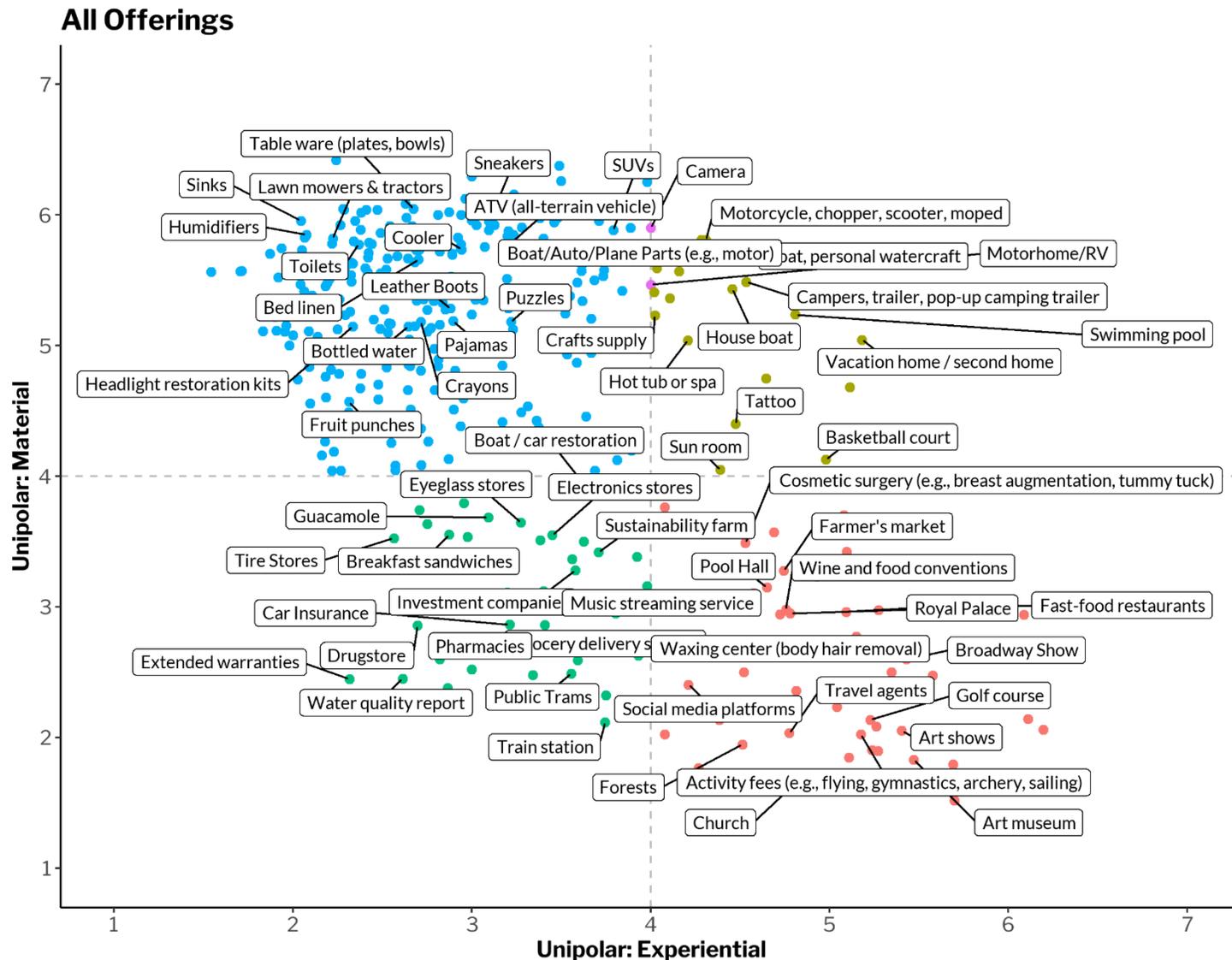
Plotting All Offerings

Table S.2 shows the fraction of stimuli that fell into each quadrant, and the fraction of stimuli in each quadrant that provided high happiness (using the same threshold as the main paper, i.e., 7/9), similar to Study 1's Table S.1. Thereafter, Figure S.3 plots all 370 offerings into four quadrants based on scale midpoints (two items fell exactly at the midpoint on the unipolar-material scale and were treated as a separate "midpoint" category).

Table S.2. Distribution of Offerings in Study 2

Category	Percentage of All Recalled Purchases that Fell into This Category	Within this Category, Percentage of Purchases Bringing High Happiness (i.e., 7 out of 9)
Material	69%	6.25%
Experiential	14%	23.53%
High-High	6%	42.86%
Low-Low	11%	0%
Midpoint	<1%	0%

Figure S.3. Plot of All Market Offerings Along Unipolar Material and Experiential Dimensions



Note. Each dot represents a marketing offering in our sample. To keep the figure readable, we labeled only a random subset of offerings on the graph.

Notably, even though the high-high offerings constituted only 6% of the 370 items in our sample, we note the significance of attending to this class of offerings, because they over-represent the items that consumers anticipate making them the happiest – among the top 10% of all offerings in terms of anticipated happiness, 24% were classified as “High-Experiential-High-Material.” As another way to look at it, 43% of these “high-high” options brought high-happiness.

Alternative Models for Analyzing the Data

If analyzing the data only with random intercepts for items, we again observe the same parity results for bipolar ($B = -.105, t = -6.97, p < .001$), unipolar material ($B = .382, t = 25.15, p < .001$), and unipolar experiential ($B = .607, t = 42.15, p < .001$). If analyzing the data only with random intercepts for subjects, we also observe the same parity results for bipolar ($B = -.242, t = -17.86, p < .001$), unipolar material ($B = .367, t = 26.44, p < .001$), and unipolar experiential ($B = .763, t = 53.28, p < .001$).

Higher-Order Relationships Between Material and Experiential Qualities

In addition to the correlation between these two unipolar ratings presented in the main paper, we also considered whether there may be higher-order relationships between them (as mentioned in the preregistration). We regressed standardized unipolar material ratings onto the linear unipolar experiential (standardized) ratings ($B = -.159, 95\% \text{ CI } [-.087, -.054], t = -8.45, p < .001$) and the squared unipolar experiential ratings ($B = .012, 95\% \text{ CI } [-.005, .029], t = 1.38, p = .17$) simultaneously, with random effects for participant and item. The results revealed a nonsignificant quadratic effect but significant linear effect, consistent with the results in the main text. Similarly, we regressed standardized unipolar experiential ratings onto the linear material (standardized) ratings and the squared unipolar material ratings simultaneously, with random effects for participant and item. There was again a negative linear effect ($B = -.116, 95\% \text{ CI } [-.135, -.097], t = -12.13, p < .001$); however, this time the quadratic term was significantly negative ($B = -.072, 95\% \text{ CI } [-.092, -.052], t = -7.09, p < .001$). This result suggests that as an offering becomes more material, it becomes much less experiential.

Higher-Order Relationships with Happiness, Material, and Experiential Qualities

Although not preregistered, we also conduct an exploratory analysis of potential higher-order relationships between the unipolar ratings and the anticipated happiness ratings. Specifically, we regressed anticipated happiness onto the unipolar material (standardized) ratings, the squared unipolar material ratings, unipolar experiential (standardized) ratings, and the squared unipolar experiential ratings. Results revealed stronger effects with the linear terms for material ($B = .353$, 95% CI [.316, .391], $t = 18.31$, $p < .001$) and experiential ($B = .587$, 95% CI [.552, .621], $t = 33.48$, $p < .001$) ratings than with the material squared ($B = -.003$, [-.044, .038], $t = -0.15$, $p = .88$) and experiential squared ($B = .058$, 95% CI [.021, .094], $t = 3.11$, $p = .002$) terms, suggesting the relationships are primarily linear (consistent with the main text).

Controlling for Price and Income in Happiness Analyses

As preregistered, to address whether the typical price for each offering influenced the relationship between material and experiential qualities and anticipated happiness, two research assistants blind to hypotheses coded the typical price range for each offering into one of five categories: under \$10 (category 1), \$10-\$99.99 (category 2), \$100-\$999 (category 3), \$1,000-\$9,999 (category 4), and \$10,000 or more (category 5). Agreement between coders was $\kappa = .418$, and disagreements were resolved through a discussion between the coders mediated by a third party blind to hypotheses.

We regressed happiness on bipolar and unipolar ratings with the same random effects used in the main study analyses, controlling for the price category with four dummies (the most expensive category, \$10,000 or more was the baseline). We find similar results to the main analyses in the paper when regressing happiness onto the standardized bipolar ratings ($B = -.147$, $t = -9.82$, 95% CI [-.176, -.118], $p < .001$) or onto both standardized unipolar ratings (material: $B = .353$, 95% CI [.323, .383], $t = 22.78$, $p < .001$; experiential: $B = .611$, 95% CI [.582, .641], $t = 40.63$, $p < .001$). We also tested a model with these dummy variables interacting with the bipolar rating or the unipolar ratings. We observed consistent effects of unipolar material ($B = .37$, 95% CI [.278, .461], $t = 7.95$, $p < .001$) and unipolar experiential ($B = .532$, 95% CI [.447, .617], $t = 12.31$, $p < .001$), though we also observed directional interactions of experiential ratings with price category 1 ($B = .101$, 95% CI [-.001, .203], $t = 1.94$, $p = .052$), and experiential ratings with price category 2 ($B = .108$, 95% CI [.013, .203], $t = 2.23$, $p = .026$). In the bipolar model, the bipolar coefficient (simple effect in price category 5) was nonsignificant ($B = -.037$, 95% CI [-

.129, .055], $t = -0.79$, $p = .43$), with the interactions with price category 1 ($B = -.096$, 95% CI [-.203, .011], $t = -1.76$, $p = .08$), 2 ($B = -.13$, 95% CI [-.232, -.028], $t = -2.50$, $p = .013$), 3 ($B = -.112$, 95% CI [-.218, -.005], $t = -2.04$, $p = .041$), and 4 ($B = -.185$, 95% CI [-.315, -.057], $t = -2.82$, $p = .005$) all being marginal or significant. Thus, these findings are robust to considering the offerings' prices.

In light of research suggesting the experiential advantage is stronger for those higher in socioeconomic status (Lee et al., 2018), we also regressed happiness onto participant-reported income (eight dummy variables with the lowest income category, Below \$20,000, as the reference category). The remaining categories were \$20,000-\$29,999, \$30,000-\$39,999, \$40,000-\$49,999, \$50,000-\$59,999, \$60,000-\$69,999, \$70,000-\$79,999, \$80,000-\$89,999, and \$90,000 or more. The results persisted in the bipolar condition ($B = -.147$, 95% CI [-.176, -.117], $t = -9.77$, $p < .001$) and the unipolar condition (Material: $B = .355$, 95% CI [.325, .385], $t = 22.92$, $p < .001$; Experiential: $B = .614$, 95% CI [.584, .643], $t = 40.81$, $p < .001$).

Plot Depicting the Correlation between the Unipolar Measures

Figure S.4 presents a scatterplot to visually depict the correlation between the unipolar experiential and material scales. As the individual datapoints fall at exact integers, a simple scatterplot of the unipolar datapoints is subject to overplotting. Hence we plot each individual datapoint with a random degree of small variation to the location of each point (between 0 and 40% of the true value) using the “geom_jitter” function in the R package ggplot. This jitter enables a visual examination of the density of the datapoints at each value of unipolar material and unipolar experiential levels. Further, a smoothed line is fit to the data (Unipolar_Material ~ Unipolar_Experiential). The plot reveals a negative correlation between the unipolar measures.

Figure S.4. Correlation plot of individual unipolar measures with 0-40% jitter, Study 2.

Analyses of Model Fit

To examine the variance in anticipated happiness accounted for by the unipolar versus bipolar measures, we compute R^2_{β} for each model (Edwards et al., 2008). It is important to note that typically, comparisons of model fit are intended to be performed on the same dependent variable. Thus, one must use caution when interpreting such statistics in this setting, as the unipolar and bipolar measures were collected between-subjects. Nevertheless, R^2_{β} is a measure of the multivariate association between the response variable (here, anticipated happiness) and the fixed effects (here, unipolar and bipolar material-experiential qualities) in a linear mixed model (here, with random effects for participant and for market offering). In essence, R^2_{β} compares a model with the specified fixed and random effects to a null model including only an intercept and the random effects: the two models assume the same error covariance model, random effects design, and random effects covariance model (Edwards et al., 2008). This measure does not penalize for the number of predictors.

As shown in Table S.3, the two unipolar material-experiential measures explain a greater proportion of variance in anticipated happiness than the bipolar measure does, in both studies. Remarkably, in both studies, a model containing only the unipolar-experiential measure, without the unipolar-material measure, also explains a relatively higher proportion of variance than does the bipolar model (albeit with this same dataset caveat).

Table S.3. Variance in Happiness Explained by Unipolar and Bipolar Material-Experiential Measures in Isolation, Studies 1 and 2

Study	N	Obs.	Method	Model	Model R^2_{β}	Exp. partial R^2_{β}	Mat. partial R^2_{β}	Bipolar partial R^2_{β}	Cost partial R^2_{β}
1	598	2,392	Recall	Unipolar: both measures	.246	.156	.004		.084
				Unipolar: E only	.243	.151			.101
				Unipolar: M only	.110		.001		.107
				Bipolar	.111			.042	.085
2	1,186	35,580	Stimuli rating	Unipolar: both measures	.136	.118	.043		
				Unipolar: E only	.108	.108			
				Unipolar: M only	.029		.029		
				Bipolar	.007			.007	

Note. All models include random intercepts for participant. Models in Study 1 additionally include fixed effects for cost, as preregistered, to account for possible variation in the types of items freely recalled by participants. Values

reported are R^2_{β} as computed by the r2glmm R package, r2beta function (Jaeger, 2017), implemented with the standardized generalized variance approach.

This underscores the point that a bipolar measure, by conflating experiential and material qualities, may mask the underlying contribution of each to happiness. To illustrate this point, consider a product that is both highly experiential and highly material. It may receive scores at the highest endpoints on the two unipolar scales, but may only be rated at the midpoint (halfway between material and experiential) on a bipolar scale. Although such an offering remains highly experiential, the added material components on a bipolar scale make the product seem less experiential. Hence, a bipolar model would underpredict the happiness derived from such a product as it underestimates the item's experiential nature.

Furthermore, partial- R^2_{β} can be computed to test the marginal contribution of each fixed effect coefficient (Edwards et al., 2008). As such, we compute these values within the unipolar model to compare the relative contribution of material versus experiential measures. As shown in Table S.3, experiential ratings explain a relatively greater proportion of variance in anticipated happiness than do material ratings.

References

- Edwards, L. J., Muller, K. E., Wolfinger, R. D., Qaqish, B. F., & Schabenberger, O. (2008). An R^2 Statistic for Fixed Effects in the Linear Mixed Model. *Statistics in Medicine*, 27 (29), 6137-57. <https://doi.org/10.1002/sim.3429>
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Market Offerings in Study 2

Table S.4. Market Offerings in Study 2

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Activity fees (e.g., flying, gymnastics, archery, sailing)	3	40	2.03	5.18	52	2.50	92	5.57
adopting or purchasing a pet	3	52	4.37	5.15	42	3.02	94	7.87
Air Conditioners	3	46	6.09	2.63	64	5.13	110	6.97
Air Filters	1	53	5.00	2.43	41	5.07	94	5.53
Air Fryers	2	48	5.92	2.67	49	5.53	97	5.76
Air Mattresses	2	48	5.46	2.81	57	5.47	105	5.41
Air Purifiers	3	52	5.88	3.10	60	5.17	112	6.05
Airline Travel	3	46	2.50	5.35	64	2.02	110	6.62
Airlines	5	53	2.77	5.15	52	3.27	105	6.20
Airplane	5	48	4.13	3.81	46	3.74	94	6.39
All-purpose cleaners	1	36	5.11	1.83	46	5.89	82	5.54
Amplifier	3	47	5.55	2.49	52	5.38	99	5.60
Antivirus Software	2	45	4.27	2.18	35	4.97	80	5.59
Appliance stores	3	59	3.68	2.41	55	4.93	114	5.39
Architecture Museum	1	46	2.09	5.26	52	2.27	98	6.20
Art museum	1	53	1.83	5.47	49	1.92	102	6.86
Art shows	2	57	2.05	5.40	46	2.17	103	6.26
Athletic pants	2	34	5.74	2.71	45	5.69	79	6.05
Athletic shoes	2	39	5.92	3.03	40	5.73	79	6.39
ATV (all-terrain vehicle)	4	52	5.73	3.17	54	4.61	106	6.06
Backpacks	2	49	5.78	2.94	58	5.12	107	6.01
Bacon	1	47	4.43	3.36	72	4.85	119	6.67
Bakery	1	41	3.37	3.56	52	4.04	93	6.81

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Banks & Credit Unions	1	37	2.38	2.86	39	4.97	76	5.68
Basketball court	5	47	4.13	4.98	51	3.69	98	5.70
Batteries	1	43	5.67	2.42	45	5.93	88	5.64
Beach towels	2	39	5.56	2.51	55	5.75	94	5.72
Bed	3	45	5.76	3.18	38	5.21	83	7.35
Bed linen	2	47	5.66	2.70	51	5.69	98	6.40
Beer	1	41	4.41	3.17	40	3.88	81	6.07
Bicycle	3	53	5.72	3.26	49	4.94	102	6.42
Bike Helmets	2	49	5.33	2.84	58	5.67	107	5.41
Bike tour	3	48	1.90	5.27	43	2.21	91	6.12
Bike trailers	3	41	5.17	2.54	43	5.14	84	5.46
Blenders	2	54	5.63	2.33	52	5.98	106	5.84
Blogs	1	56	2.32	3.75	44	3.00	100	5.32
Blood Glucose Meters	2	33	4.82	2.21	39	5.87	72	4.49
Blood Pressure Monitors	2	48	5.13	2.25	39	5.21	87	5.07
Blouse	2	48	5.69	2.58	49	5.94	97	5.75
Blu-ray players	2	45	5.89	2.38	61	4.84	106	6.10
Board games	2	59	5.66	3.73	45	3.60	104	6.45
Boat / car restoration	5	47	3.96	3.62	38	4.58	85	6.07
Boat, personal watercraft	4	37	5.65	4.38	45	4.67	82	6.91
Boat/Auto/Plane Parts (e.g., motor)	4	60	5.62	3.62	45	5.11	105	6.10
Body lotion	1	44	5.14	2.77	48	4.90	92	6.22
Boilers	4	59	4.97	2.20	43	5.93	102	4.79
Books	2	59	5.59	4.03	44	4.45	103	7.01
Botanical garden	2	42	3.57	4.69	58	2.86	100	6.92
Bowling Alley	2	64	2.36	4.81	52	2.65	116	6.27
Bracelets	2	39	5.77	2.54	42	5.81	81	6.30

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Breakfast sandwiches	1	47	3.55	2.87	45	4.38	92	6.40
Buddhist temple	1	56	1.77	4.27	54	2.56	110	5.45
Cabin (e.g., a lake cabin)	3	44	4.68	5.11	51	4.14	95	7.84
Cabs (taxis)	2	53	2.25	3.13	51	3.41	104	4.78
Cake	2	50	4.46	3.64	49	4.18	99	6.99
Camcorders	3	64	6.16	3.23	42	4.57	106	6.13
Camera	3	61	5.90	4.00	51	4.67	112	6.91
Campers, trailer, pop-up camping trailer	4	43	5.49	4.53	48	4.21	91	6.84
Canned tuna	1	45	4.04	2.27	40	5.30	85	4.66
Canoe	3	47	5.34	3.62	47	4.19	94	6.49
Car	5	51	6.25	3.98	44	5.27	95	7.38
Car batteries	2	49	5.57	1.71	41	6.12	90	5.26
Car Insurance	3	52	2.87	3.21	48	4.46	100	5.61
Car repair shops	3	55	3.11	3.20	47	5.04	102	4.80
Car seats	3	49	5.51	2.20	54	5.63	103	5.39
Car wax	2	55	4.76	2.18	59	5.41	114	4.86
Carpet cleaners	2	52	5.15	1.96	52	5.42	104	5.33
Cell phones & services	3	45	5.53	3.73	56	5.04	101	6.86
Central Air Conditioning	4	45	5.00	3.07	46	4.93	91	7.36
Cereals	1	39	4.74	2.03	39	5.18	78	5.69
Chain Saws	3	49	5.33	2.08	56	6.29	105	4.90
Chocolates	1	55	4.65	3.13	52	4.69	107	7.21
Church	1	50	1.64	4.80	50	2.16	100	4.82
Cigarette	2	41	3.98	2.80	48	3.73	89	2.71
Classic car	5	43	5.70	3.60	43	4.98	86	6.52
Clothes Dryers	3	50	5.80	2.34	53	5.77	103	6.16
Coffee	1	42	4.60	2.95	49	4.39	91	6.84

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Coffee makers	2	47	5.79	2.43	44	5.59	91	6.46
Computer backup systems	3	42	4.05	2.57	46	4.85	88	6.32
Computer monitors	3	46	5.78	3.39	45	5.56	91	6.66
Computers	3	64	6.13	3.84	53	5.36	117	7.30
Convertibles	5	54	5.50	3.69	48	4.94	102	6.98
Cooking knives	2	49	5.88	3.20	54	5.78	103	6.48
Cooking recipes	1	56	4.20	3.89	50	3.70	106	6.20
Cooktops	3	45	5.71	2.42	45	5.58	90	6.02
Cookware	2	51	6.00	2.94	50	5.46	101	6.48
Cooler	2	53	5.74	2.94	43	5.70	96	5.77
Cordless Drills	2	53	5.92	2.26	34	6.03	87	5.53
Cordless phones	2	53	6.28	2.66	39	5.62	92	6.20
Cosmetic surgery (e.g., breast augmentation, tummy tuck)	4	51	3.49	4.53	38	3.74	89	4.90
Countertops	4	51	5.86	2.49	39	6.28	90	5.80
Crafts supply	1	43	5.23	4.02	44	4.39	87	5.98
Crayons	1	49	5.18	2.71	56	5.00	105	5.64
Credit cards	2	53	4.85	3.17	40	5.05	93	5.55
Cruise	3	51	2.06	6.20	50	1.88	101	6.86
Customer service	1	38	2.03	4.08	55	2.31	93	5.35
Cybersecurity software	2	58	3.74	2.71	47	4.85	105	5.46
Day Backpack	2	49	5.33	3.39	45	5.04	94	6.20
Deck, patio, or porch	4	54	4.94	3.67	50	5.16	104	7.18
Dehumidifiers	3	50	5.26	2.32	48	5.88	98	5.26
Deodorant	1	42	4.83	2.52	41	5.68	83	6.13
Destinations (e.g., Florida, Alaska, Hawaii)	3	64	2.14	6.11	45	1.33	109	8.01
Diet plans	2	46	2.50	4.52	46	3.30	92	5.02

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Dishwasher detergents	1	44	4.77	1.91	39	5.95	83	5.42
Dishwashers	3	48	5.52	1.92	36	6.00	84	5.90
Door Locks	3	40	5.20	2.45	45	6.27	85	5.82
Dress	2	50	5.84	3.20	48	5.40	98	6.09
Drugstore	1	56	2.86	2.70	39	4.69	95	5.34
E-book readers	2	49	5.35	3.27	49	4.20	98	6.50
Eggs	1	45	4.49	2.31	51	5.06	96	5.82
Electric razors	2	43	6.21	2.28	42	5.76	85	5.68
Electronics stores	2	51	3.55	3.45	47	5.02	98	5.63
Ellipticals	4	54	5.91	3.28	50	4.90	104	5.74
Email service	1	50	2.48	3.34	46	3.89	96	5.73
Entertainment center	4	42	5.38	3.55	42	4.21	84	7.29
Entry doors	3	56	5.11	2.75	41	6.22	97	5.58
Exercise bikes	3	60	5.85	3.23	53	4.89	113	6.18
Extended warranties	2	38	2.45	2.32	42	4.81	80	5.20
Eyeglass stores	3	51	3.65	3.27	43	4.88	94	5.21
Face masks (for blocking germs)	1	42	4.81	2.71	48	5.35	90	5.04
Farmer's market	1	47	3.28	4.74	56	3.23	103	6.54
Fast Food	1	44	3.64	2.75	44	4.84	88	5.83
Fast-food restaurants	1	41	2.95	4.78	49	3.98	90	5.57
Faucets	3	44	5.45	2.18	45	6.00	89	5.69
Film Festival	3	52	2.06	5.48	53	2.23	105	6.71
Fire extinguishers	2	34	5.24	2.29	51	6.16	85	5.18
Fitness trackers	2	44	5.68	3.45	48	5.02	92	6.02
Flooring	4	51	5.35	3.02	57	5.91	108	6.05
Food processors & choppers	2	48	5.52	3.00	48	5.60	96	5.88
Forests	5	39	1.95	4.51	45	2.51	84	7.02

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Fragrance	2	37	4.73	3.19	49	4.41	86	6.34
Freezers	3	46	5.57	1.54	53	6.15	99	5.79
Fresh produce	1	48	4.38	3.38	60	4.38	108	7.08
Frozen Foods	1	56	4.66	2.64	55	5.05	111	5.55
Frozen pizza	1	44	4.59	2.48	47	4.70	91	5.95
Frozen waffles	1	51	4.25	2.55	51	4.90	102	5.52
Fruit punches	1	35	4.57	2.31	43	4.84	78	5.40
Furniture for deck, patio, or porch	3	47	6.06	3.43	52	5.29	99	6.86
Garbage disposers	3	44	5.57	1.70	48	6.00	92	5.63
Garden plants and flowers	2	61	4.72	3.89	36	3.97	97	7.18
Gas furnaces	4	49	5.47	2.04	46	5.24	95	5.63
Generators	3	48	5.56	2.42	52	6.04	100	5.72
Glues	1	52	4.56	2.10	42	5.86	94	4.72
Gold	4	47	5.64	2.68	53	6.23	100	7.30
Golf	2	40	2.98	5.28	50	2.92	90	5.14
Golf cart	3	56	5.48	3.59	48	5.00	104	5.57
Golf course	5	44	2.14	5.23	52	3.08	96	5.44
GPS	3	62	4.94	3.53	44	4.82	106	6.16
Grills	3	34	6.29	3.00	48	5.27	82	6.62
Grocery delivery service	2	54	2.59	3.59	68	3.97	122	6.55
Grocery Stores & Supermarkets	2	40	3.50	3.63	49	4.41	89	6.06
Guacamole	1	54	3.69	3.09	48	3.94	102	5.76
Gum	1	49	4.37	2.71	45	4.76	94	5.41
Hair removal	3	41	2.95	3.80	42	4.19	83	4.81
Hand sanitizers	1	55	4.84	2.09	48	5.02	103	5.34
Handbags	2	42	6.00	2.81	44	5.59	86	5.81
Headlight restoration kits	2	48	5.15	2.33	57	5.67	105	4.95

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Headphones	3	56	6.46	3.32	40	5.30	96	7.05
Healthy snacks	1	48	5.02	2.83	44	4.66	92	6.77
Hearing aids	3	46	5.24	3.00	50	3.94	96	4.98
Heart-rate monitors	3	43	4.98	2.79	48	4.96	91	4.91
Heat pumps	4	48	5.58	2.52	56	5.61	104	5.49
High chairs	2	47	5.38	2.11	51	5.53	98	4.64
Hiking trail	1	60	1.52	5.70	45	1.76	105	7.03
Holiday, vacation, travel	3	42	2.62	6.00	62	1.63	104	8.15
Home beautification (e.g., remodeling, renovation)	4	48	4.75	4.65	60	4.38	108	7.40
Home Security Systems	3	53	4.66	2.79	41	5.63	94	5.88
Home theater	5	47	5.36	4.11	44	4.11	91	7.26
Homeowners insurance	2	46	2.72	3.11	46	4.50	92	5.74
Hot tub or spa	4	48	5.04	4.21	44	3.57	92	7.52
Hotel rooms	3	44	2.64	5.09	42	2.83	86	6.78
Hotels	5	47	2.23	5.04	55	2.33	102	6.89
House boat	5	46	5.43	4.46	53	4.49	99	6.68
House cleaning supplies	1	39	5.13	2.49	45	5.67	84	5.32
Humidifiers	2	53	5.85	2.08	46	5.74	99	5.69
Hybrids/EVs	5	40	5.28	2.75	58	5.41	98	5.80
Ice Creams & Frozen Desserts	1	49	4.78	3.88	48	3.73	97	7.33
Ice pack	1	49	5.10	2.53	43	5.63	92	4.90
Insect Repellents	1	41	4.51	2.66	55	5.16	96	5.08
Instruments (e.g., piano, bass, viola)	3	40	5.30	3.53	41	4.41	81	6.25
Investment companies	5	57	3.28	3.58	45	4.20	102	5.53
Jet ski	4	50	5.42	3.84	42	4.10	92	6.26
Jewelry, wedding ring	5	54	6.26	3.50	47	5.11	101	6.83

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Journal (notebook)	1	65	5.25	3.52	46	4.43	111	5.79
Juicers	2	57	5.82	2.60	50	5.36	107	5.99
Jump starters	2	48	5.00	1.98	43	5.33	91	5.33
Karaoke equipment	3	53	5.68	3.96	58	4.26	111	5.50
Kayaking	2	59	2.47	5.58	48	2.67	107	6.60
Ketchup	1	40	4.68	2.38	48	4.77	88	5.48
Kitchen appliances	4	55	5.64	2.33	61	5.80	116	6.30
Kitchen cabinets	4	59	5.78	2.44	48	5.73	107	6.23
Kitchen counters	4	52	5.29	2.17	48	5.50	100	5.96
Kitchen knives	3	55	5.78	2.22	47	5.40	102	5.77
Kitchen remodeling	4	45	4.31	3.76	35	4.89	80	7.29
Ladders	2	44	5.64	2.23	47	6.34	91	4.79
Lamps	2	49	6.04	2.41	50	6.26	99	5.86
Laundry detergents	1	65	5.11	1.95	48	5.75	113	5.57
Lawn mowers & tractors	3	45	5.82	2.22	55	5.98	100	5.25
Lead test kits	2	46	4.04	2.22	51	5.31	97	4.36
Leaf Blowers	3	49	5.49	2.33	47	5.55	96	4.90
Lightbulbs	2	47	5.28	2.51	45	5.76	92	5.92
Live music	2	39	1.79	5.69	44	1.57	83	7.78
Luggage	3	37	5.95	3.46	47	5.68	84	5.87
Luxury cars	5	62	5.90	3.89	60	4.73	122	6.93
Magazines	2	42	4.98	2.52	45	5.04	87	5.46
Make up	2	48	5.13	3.23	51	4.98	99	5.70
Mattresses	3	42	5.98	3.38	62	5.39	104	6.98
Meat thermometers	2	42	5.26	2.05	49	6.00	91	5.15
Microwave ovens	3	36	5.67	2.53	33	5.85	69	6.07
Minivans	5	67	5.66	3.21	43	5.60	110	5.46

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Mixers	3	50	5.16	2.82	42	5.67	92	5.66
Mobile security software	2	43	3.53	2.98	49	4.65	92	5.60
Motorcycle, chopper, scooter, moped	4	42	5.81	4.31	58	4.52	100	5.83
Motorhome/RV	5	45	5.47	4.00	46	4.24	91	6.79
Multi-Cookers	2	45	5.73	2.69	38	5.84	83	6.06
Music streaming service	1	47	3.11	4.57	56	2.55	103	7.01
National Park	2	48	2.02	5.65	36	1.72	84	7.52
Newspapers	1	46	4.13	2.87	47	4.13	93	4.86
Online trading (of stocks)	1	39	2.69	3.03	54	4.48	93	5.78
Painkillers	1	41	4.27	2.76	44	3.48	85	4.95
Paintings	3	41	5.76	3.07	41	4.46	82	6.65
Paints	2	56	4.98	2.95	69	4.78	125	5.66
Pajamas	2	48	5.19	2.90	51	5.75	99	6.45
Paper towels	1	42	4.79	2.38	49	6.10	91	5.60
Parchment paper	1	47	5.15	2.68	36	5.72	83	5.06
Pasta (dry in a box)	1	42	4.93	2.52	41	5.41	83	5.88
Pasta Sauce	1	70	4.79	2.26	52	4.92	122	6.11
Pedometers	2	47	5.28	2.85	45	5.02	92	5.40
Pharmacies	2	50	2.60	2.82	38	4.42	88	5.08
Pickup trucks	5	50	5.96	3.00	56	5.20	106	6.12
Pillows	2	47	6.02	2.87	45	5.22	92	7.16
Plane ticket	3	37	3.70	5.08	51	3.29	88	7.31
Play set	3	49	5.41	4.02	58	4.34	107	5.77
Play yards	2	51	3.76	4.08	58	3.55	109	6.10
Pocket translator (device for translating languages)	3	49	5.29	3.20	49	4.20	98	5.46
Pool float	2	53	4.81	2.91	38	5.08	91	5.42

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Popcorn	2	44	3.80	2.95	35	4.14	79	6.66
Pots and pans	1	51	6.20	2.75	50	5.54	101	5.78
Prepaid cards	3	44	4.70	2.48	58	5.21	102	6.33
Pressure Washers	2	50	5.22	1.90	47	5.85	97	5.42
Printers	3	46	5.96	2.35	51	6.00	97	5.82
Private dinner event	2	51	2.27	5.76	53	2.04	104	7.24
Pool Hall	1	40	3.15	4.65	51	2.73	91	5.66
Public Charging stations (for phones, etc.)	2	44	2.86	3.41	33	4.42	77	5.86
Public Trams	1	45	2.49	3.56	46	2.89	91	4.67
Puzzles	2	55	5.18	3.22	53	4.21	108	6.01
Racing cars / track cars	5	49	4.78	4.08	48	4.35	97	5.89
Radon test kits	2	50	4.16	2.16	44	5.05	94	4.62
Rain jacket	2	48	5.92	2.54	55	5.69	103	5.83
Range hoods	3	46	5.83	2.07	48	5.90	94	5.28
Recycling service	2	44	2.52	3.00	60	3.53	104	6.37
Refrigerator thermometers	1	45	5.58	2.20	50	6.00	95	5.36
Refrigerators	4	42	6.17	2.67	47	5.87	89	6.31
Replacement Windows	3	42	5.60	2.40	48	5.79	90	5.74
Resorts	4	49	1.96	5.88	39	2.46	88	7.63
Restaurants	2	43	3.23	4.93	50	2.90	93	7.22
Rewards cards	2	45	4.04	3.69	54	4.87	99	6.32
Roofing	3	38	4.61	2.18	53	5.77	91	5.69
Rooftop terrace	5	46	3.65	4.37	48	4.40	94	6.98
Rowing machines	3	37	5.70	2.89	53	4.79	90	5.13
Royal Palace	5	54	2.96	5.09	54	3.24	108	6.55
Safety gates	3	38	5.08	2.00	56	5.70	94	5.17
Salad dressings	1	48	4.90	2.81	43	4.44	91	5.82

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Sandals	2	42	6.17	2.26	46	5.85	88	6.13
Scales	2	52	5.48	2.19	51	5.59	103	4.99
Sculptures	3	49	5.57	3.61	44	5.23	93	6.00
Sedans	5	47	5.74	2.94	54	5.15	101	6.52
Sewing machines	3	44	5.07	2.14	41	5.24	85	4.99
Shampoo	1	62	5.35	2.26	38	5.34	100	5.86
Sheets	2	46	5.70	2.89	47	5.64	93	6.61
Shelving units	3	37	5.54	2.32	38	5.87	75	5.57
Shopping websites	2	50	3.16	3.98	41	4.76	91	6.18
Showerheads	2	51	5.78	2.59	58	5.79	109	5.82
Siding	4	48	5.60	2.15	54	5.57	102	5.23
Sinks	3	46	5.96	2.04	42	5.71	88	5.45
Slow Cookers	2	40	5.93	3.13	46	5.35	86	6.59
Small cars	5	46	5.35	3.07	53	5.60	99	5.74
Smartphones	3	45	6.38	3.49	46	4.87	91	7.32
Smartwatches	3	53	6.23	2.83	51	5.57	104	6.13
Smoke & Carbon Monoxide Detectors	2	54	5.80	2.54	54	5.46	108	5.97
Snacks	1	46	4.87	3.59	54	4.39	100	7.04
Sneakers	2	42	5.95	3.10	52	5.33	94	6.65
Snow Blowers	3	55	5.56	2.29	32	5.69	87	5.14
Snow mobile / ski-doo	4	53	5.74	4.72	54	4.13	107	6.49
Social media platforms	1	52	2.40	4.21	44	2.77	96	5.60
Sofa chairs	3	41	5.51	3.20	51	5.96	92	6.70
Sound bars	3	48	5.21	3.67	36	4.89	84	6.33
Soups & broths	1	58	4.84	2.66	53	4.30	111	6.11
Space Heaters	2	62	5.45	2.42	52	5.79	114	5.58
Spices	1	58	4.84	2.81	53	4.38	111	6.35

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Spiral hams	2	46	4.09	2.72	46	5.00	92	5.47
Sporting goods stores	2	39	3.38	3.92	51	5.20	90	5.23
Sports cars	5	45	5.96	3.71	51	4.69	96	6.85
Steam irons	2	46	5.65	1.98	53	5.96	99	5.05
Steam mops	2	47	5.32	2.21	58	5.78	105	5.64
Straw hat	1	41	5.73	2.05	43	5.67	84	5.02
Streaming Media	2	42	3.33	4.55	50	2.94	92	6.96
Sun room	5	41	4.05	4.39	46	3.96	87	7.05
Sunglasses	3	52	5.83	2.81	44	5.45	96	6.46
Sunscreens	1	49	4.51	2.90	59	5.27	108	5.77
Super glue	1	43	5.12	1.91	55	6.13	98	5.08
Surfboard	3	44	5.57	4.16	52	4.29	96	5.84
Sustainability farm	2	55	3.42	3.71	36	4.08	91	5.99
SUVs	5	43	5.88	3.79	52	5.42	95	6.74
Swimming pool	4	42	5.24	4.81	43	3.56	85	7.51
Swimsuit	2	50	5.82	3.40	43	5.26	93	5.89
Table ware (plates, bowls)	2	43	6.05	2.67	39	6.00	82	5.88
Tablets	3	56	6.13	2.96	53	5.53	109	6.74
Tattoo	3	40	4.40	4.48	43	3.72	83	4.66
Tea cups	2	47	5.74	1.94	58	5.71	105	5.05
Telecom services	2	50	3.12	3.40	39	3.79	89	5.51
Television	3	49	6.06	3.55	41	4.39	90	6.82
17th century fortress	5	43	2.63	3.93	27	3.41	70	5.84
Thermometers	2	47	5.70	1.87	46	5.98	93	5.34
Thermostats	3	45	5.11	2.09	51	5.88	96	5.86
Time share	5	52	3.42	5.10	61	3.08	113	5.62
Tire pressure gauges	1	59	5.56	2.19	52	6.12	111	5.05

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Tire Stores	2	55	3.53	2.56	63	5.94	118	4.96
Tires	3	44	5.80	2.70	57	6.11	101	5.89
Toasters & Toaster Ovens	2	42	5.67	2.64	49	6.00	91	5.99
Toilet paper	1	42	5.17	2.55	36	6.08	78	6.42
Toilet-bowl cleaners	1	42	5.24	1.90	41	5.85	83	4.73
Toilets	3	49	5.78	2.37	48	5.98	97	6.16
Toothbrushes	1	58	5.52	2.76	39	5.62	97	6.18
Tour guides	3	46	1.85	5.11	47	1.96	93	6.12
Train Service	2	60	2.13	4.38	44	2.93	104	6.00
Train station	2	59	2.12	3.75	50	3.40	109	5.31
Travel agents	3	58	2.03	4.78	45	2.60	103	5.87
Travel guide app	1	36	2.94	4.72	54	3.13	90	5.77
Treadmills	4	54	5.70	3.19	44	4.77	98	5.63
Truck	5	54	5.98	3.48	55	5.13	109	6.50
Turkey breast deli slices	1	47	4.49	3.28	50	4.56	97	5.89
Upcycled products (products re-made from trash)	2	43	5.05	2.65	46	5.07	89	5.82
UTV (utility task vehicle)	4	50	5.58	3.74	48	4.69	98	6.18
Vacation home / second home	5	44	5.05	5.18	50	3.72	94	7.85
Vacation rental	2	34	2.94	6.09	47	2.09	81	7.93
Vacuum cleaners	2	50	6.02	2.38	52	5.96	102	5.43
Vases	2	43	6.05	2.28	38	6.00	81	5.21
Veggie burgers	1	47	4.38	2.94	36	3.72	83	5.51
Video-game consoles	3	53	5.81	4.28	46	4.48	99	6.99
Vineyards	2	60	3.02	4.45	44	3.84	104	6.67
Vodka	2	63	4.22	3.67	61	3.39	124	5.42
Wagons	2	55	5.35	2.69	54	5.61	109	4.99
Wall Ovens	4	50	5.72	2.82	51	6.08	101	5.78

Item	Price Category (Coded)	N Unipolar Ratings	Unipolar Material Average	Unipolar Experiential Average	N Bipolar Ratings	Bipolar Ratings Average	N Happiness Ratings	Happiness Average Ratings
Wall paper	3	36	4.94	2.53	56	5.50	92	5.22
Washing Machines	3	51	6.04	2.47	43	5.67	94	6.40
Watch	2	50	6.42	2.24	35	5.60	85	6.27
Water bottle	1	50	5.62	2.30	47	5.98	97	5.81
Water filters	2	47	5.34	2.79	54	5.83	101	6.23
Water Heaters	4	48	5.42	2.06	46	5.63	94	5.82
Water quality report	2	31	2.45	2.61	51	4.04	82	5.02
Waxing center (body hair removal)	2	47	2.70	4.04	55	3.84	102	4.95
Wet/dry vacuums	3	52	5.98	2.63	47	5.94	99	5.38
Whiskey	2	60	4.78	3.80	48	3.21	108	5.80
Wifi networks	2	47	3.51	3.38	57	4.12	104	6.83
Wine and food conventions	2	45	2.98	4.76	38	2.82	83	6.34
Wine chillers	4	48	5.35	2.73	53	5.04	101	5.52
Wine glasses	2	52	5.83	2.92	54	5.54	106	5.63
Wines	2	67	4.54	3.31	59	4.15	126	5.98
Wiper blades	2	49	6.04	2.29	55	5.65	104	5.44
Wireless & Bluetooth Speakers	2	43	5.77	3.28	56	5.02	99	6.56
Wireless routers	2	51	5.53	2.88	49	5.22	100	6.23
Wood stains	2	48	4.19	2.23	44	5.50	92	4.66
Wrinkle cream	2	48	4.85	2.65	52	5.71	100	5.35
Yard work (e.g., landscaping)	2	39	2.36	3.13	37	3.19	76	5.47
Yogurt	1	49	4.08	2.57	52	4.46	101	5.66
Bottled water	1	48	5.15	2.65	47	5.32	95	5.66
Broadway Show	3	35	2.60	5.43	41	1.44	76	6.38
Leather Boots	3	42	5.29	2.88	48	5.85	90	6.10
Comedy Show	2	42	1.90	5.24	54	1.94	96	6.96

Supplementary Studies

Supplementary Study 1: Conceptual Replication of Study 1

Supplementary Study 1 resolves three possible limitations of Study 1. First, consistent with past literature, Study 1 participants recalled purchases they made that increased their happiness. Yet, the present theory should apply more broadly to all purchases. To resolve this limitation, Supplementary Study 1 participants recall a recent purchase they made without any reference to happiness. Second, participants in Study 1 completed indirect happiness measures that may have reflected their lay beliefs about what made them happy. To ameliorate this concern, in Supplementary Study 1 participants recalled only one purchase, and they were asked to spend time reliving their experience with that purchase before reporting how happy they felt right in that moment. Finally, Study 1 assessed happiness, experientialness, and materialness on three similar scales sequentially; Supplementary Study 1 instead adopted a 101-point scale for happiness, and randomly intermixed the experiential and material items across a series of other measures. Notably, the supplementary studies did not include a bipolar condition because they were focused on resolving potential confounds regarding the unipolar conditions.

Method

Participants

Participants were 444 Amazon Mechanical Turk Workers ($M_{\text{age}} = 41.37$, 58.78% female). We collected 507 MTurk responses for \$0.40 compensation prior to preregistered exclusions. See https://aspredicted.org/473_876 for this study's preregistration.

Procedure

Supplementary Study 1 employed the same design as in Study 1 with four major changes. First, there was no bipolar condition as Supplementary Study 1 focused on replicating the results

from the unipolar condition. Second, participants only recalled one purchase that was specified to be a recent purchase from within the last month, costing at least \$50, in line with prior research (Van Boven & Gilovich, 2003). Participants reported if they had received or experienced the purchase yet (or if they would receive or experience it in the future); we only included participants who had received/experienced it to ensure they could provide meaningful ratings. For completeness, those who were going to receive or experience the purchase in the future still completed the study.

Third, participants vividly relived their interactions with the purchase. Specifically, they answered, “In the space below, please describe how you were using, having, interacting with, or experiencing this purchase. As you write, focus on: What did you do? How did you feel?” Next, participants reported their current emotions, answering, “Now, how happy do you currently feel?” on a 101-point sliding scale (-50 = Very unhappy; 0 = Neither happy nor unhappy; 50 = Very happy). This response scale differed from the scale in Study 1, and also purposefully differed from the 7-point radio-button response scales for the unipolar experiential and unipolar material ratings.

Fourth, to ensure the happiness, experiential, and material ratings were not always in the same sequential order (i.e., to limit the potential for common method bias), after the happiness measure, we randomized the order of six questions across six pages: the unipolar experiential rating from Study 1, the unipolar material rating from Study 1, the price of the purchase, how personally important the purchase they wrote about was (1 = Not at all, 4 = Moderately, 7 = Very), how recent the purchase was (Today, Within the past week, 1-3 weeks ago, 1-2 months ago, and Over 2 months ago), and whether the purchase they wrote about “turned out well” or “turned out poorly.” The purchase importance question was also intended as a control against

common methods bias by partialling out a variable that could explain an inflated relationship between the unipolar scales and happiness (see Podsakoff et al., 2003). Then, participants reported demographic information and answered a bot check and an instructions check (participants who failed either of these two were removed, as in Study 1).

We removed any participants who did not write about an expenditure (as indicated by a research assistant who was blind to the study hypotheses) or had not yet received the expenditure, as preregistered. Of 508 participants completing the study, five were cut for not writing about an expenditure, two more either failed the instruction check or bot check, and fifty-seven hadn't received the purchase yet, leaving a sample of $N = 444$.

Results

The table below (S.5) presents variable summaries for the unipolar measures for this study and the subsequent Supplemental Study 2.

Table S.5. Summary of Unipolar Measures in Supplementary Studies 1 and 2

Measure	Supplemental Study 1 Average (SD)	Supplemental Study 2 Average (SD)
<i>Unipolar experiential</i>	3.42 (2.10)	3.32 (1.08)
<i>Unipolar material</i>	5.16 (2.18)	4.91 (1.48)

First, consistent with other studies, the correlation between experiential and material dimensions was only moderately negative ($r = -.291, p < .001$).

Second, consistent with Study 1, when regressing happiness onto standardized experiential ($B = 4.37, t = 4.57, p < .001$) and material ($B = 3.67, t = 3.84, p < .001$) dimensions,

both were positive predictors.² Experiential ($B = 4.39, t = 4.57, p < .001$) and material ($B = 3.69, t = 3.84, p < .001$) predictors remained positive even when including natural log of price + 1 as a covariate ($B = -.264, t = -0.27, p = .79$). When regressing happiness onto standardized experiential ($B = 4.31, t = 4.46, p < .001$) and material ($B = 3.74, t = 3.86, p < .001$) dimensions, and their interaction ($B = -.379, t = -0.45, p = .66$), we again observed similar results. When controlling for importance ($B = 2.58, t = 4.13, p < .001$), natural log of price + 1 ($B = -1.41, t = -1.42, p = .16$), and income, we again observed a positive relationship from experiential ($B = 3.62, t = 3.75, p < .001$) and material ($B = 3.61, t = 3.82, p < .001$) dimensions. Experiential ($B = 3.62, t = 3.75, p < .001$) and material ($B = 3.61, t = 3.82, p < .001$) remained positive when controlling for natural log of price (without +1; $B = -1.40, t = -1.42, p = .16$) instead in the aforementioned regression.

Even when including the people who had not yet received their expenditures in the analysis, experiential ($B = 3.77, t = 4.07, p < .001$) and material ($B = 3.23, t = 3.49, p < .001$) qualities were positively related to happiness.

Discussion

Supplementary Study 1 conceptually replicated Study 1 with more general recall instructions and a more direct measure of current happiness. Supplementary Study 1 also implemented steps to address common methods bias, including placing items on different scales, measuring and controlling for potentially relevant other variables (here, purchase importance) and adding space between dependent measures of interest (Podsakoff et al., 2003).

Supplementary Study 2: Conceptual Replication of Study 2

² These coefficient values were indeed larger as the happiness measure was 101-points.

Supplementary Study 2 addressed a potential weakness of Study 2: that all participants rated each of happiness, material, and experiential measures, which may have inflated correlations among them (Podsakoff et al., 2003). Supplementary Study 2 therefore randomly assigned participants to provide only one of the ratings for a set of goods between-subjects, and then analyzed the relationship between happiness and the two unipolar scales at the offering level. That is, we had different participants rate different dimensions of common offerings to reduce the impact of common method bias (MacKenzie & Podsakoff, 2012; Podsakoff et al., 2003). This time, however, we did not include a bipolar condition as it was not pertinent to addressing the concern of common method bias.

Method

Participants

Participants were 1060 Amazon Mechanical Turk Workers ($M_{age} = 39.86$, 54.25% female). We collected 1282 MTurk responses for \$0.25 compensation prior to the preregistered exclusions. See https://aspredicted.org/36X_BYZ for this study's preregistration.

Procedure

Supplementary Study 2 employed the same design as in Study 2 with two changes. First, there was no bipolar condition as Supplementary Study 2 focused on replicating the results from the unipolar condition. Second, participants were randomly assigned to make one of three ratings on the same scales from Study 2: the happiness rating, the unipolar experiential rating, or the unipolar material rating. We removed participants who failed the attention check or bot check. Of 1282 participants who completed the study, 1060 passed the attention check and the bot check and are retained for analyses.

Results

In Supplementary Study 2, we first took the average rating for happiness, materialness, and experientialness within each of the 370 offerings. We then analyzed the remaining dataset at the item level, consisting of 370 observations, one for each offering, each with a corresponding happiness, material, and experiential rating.

Relationship between the Material and Experiential Unipolar Measures

The correlation between experiential and material scores at the item level was $r = -.405$, $p < .001$.

Relationship with Anticipated Happiness

We again observed that both experiential ($B = .394$, $t = 8.90$, $p < .001$) and material ($B = .192$, $t = 4.34$, $p < .001$) scores both positively predicted anticipated happiness.

Discussion

Supplementary Study 2 yielded convergent findings with Study 2 and ruled out a potential source of common method bias.