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Social Psychology

Revisiting the Differential Centrality of Experiential and Material Purchases to the Self: Replication and Extension of Carter and Gilovich (2012)

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Carter and Gilovich (2012) investigated the centrality of experiential and material purchases to the self and concluded people have stronger associations with their experiential than their material purchases. In a pre-registered experiment with a US American Amazon Mechanical Turk sample, (*N*=743), we successfully replicated their Studies 3A, 3B, 3C, and 5. Experiential purchases were perceived as more reflective of true-self than material purchases for both self (*d*=0.65[0.57,0.73]) and for strangers (*d*=0.88[0.80,0.96]), and that when meeting a new person, information about experiential purchases was considered to be more insightful (*d*=1.13[1.04,1.22]), useful (*d*=1.14[1.05,1.23]), and fun to talk about (*d*=1.96[1.83,2.08]) than material purchases. Self-concept was more strongly associated with experiential purchases than with material purchases (*d*=0.39[0.25,0.54]), and that there was a negative association between experiential purchase satisfaction and the willingness to exchange memory (*r*=-.34[-.43,-.24]) (all effects above were *p*<.001). We added an extension examining change in evaluations of material and experiential purchases over time and found that current evaluations were more negative than past evaluations, yet to a lesser extent for experiential compared to material purchases. Materials, data, and code are available on: https://osf.io/v2w5h/

A common proverb is that money cannot buy happiness. Scholars studying happiness have in recent years suggested that money may indirectly "purchase" subjective well-being after all, depending on the type of purchase: people tend to be happier when purchasing experiences than when purchasing material goods (Carter & Gilovich, 2010; Van Boven & Gilovich, 2003).

Material purchases are the consumption of tangible goods, such as cars and clothes, with a strong emphasis on the ownership of goods lasting for an extended period of time. Experiential purchases, on the other hand, emphasize the purpose of gaining experiences. They are intangible in nature and constitute an important part of one's memory. Prior studies demonstrated that people achieve more satisfaction from experiences than from possessions because of the greater difficulty in comparing the hedonic value of experiences from memories, than in comparing that of tangible physical possessions (Carter & Gilovich, 2010). Extending this line of research, Carter and Gilovich (2012) explored the relationship between purchase type and self, further suggesting that greater satisfaction results from a close association between experiences and the self, such that people perceived their experiential purchases as more connected to the self than material possessions.

We conducted a very close replication of Carter and Gilovich (2012) aiming to revisit the findings regarding the centrality of experiential and material purchases to the self. We begin by briefly reviewing the links between different types of purchases and the self, and then outline our motivations for the replication. Next, we review that target article, and outline the hypotheses, methods, and experimental design.

The Centrality of Experiences and Possessions to the Self

The self is closely associated with one's memories (Klein, 2001). Memories of experiences play a major role in forming the self (Conway, 2005; Greenwald, 1981). People tend to access memories in a way that is consistent with their pre-

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sent image in order to maintain a consistent self (Conway et al., 2004), and the way that people make sense of experiences largely shapes their understanding of themselves (Oyserman, 2001). In contrast, material possessions are tangible objects that dwell outside of our memory (Carter & Gilovich, 2012). They are seen as an extension of the self in that they serve as an enhancement of who we are and as a reminder of who we were, therefore contributing to the central aspect of the self-concept to a lesser extent than experiences (Belk, 1988).

Carter and Gilovich (2012) proposed several reasons why relating experiences to the self could result in higher satisfaction with experiential purchases than with material purchases. First, people aim to maintain a positive self-impression, and may therefore associate experiences with more positive recollections than in reality (Dunning, 2005; Mitchell et al., 1997). Second, the intangible and ambiguous nature of experiences makes it easier for people to reconstruct experiences in one's favor to enhance their self-image and boost their self-esteem (Carter & Gilovich, 2012; Dunning et al., 1995; Kunda, 1990). Third, the abstract nature of experiences also allows people to associate experiences with high-order purposes that they find important and valuable, and are, therefore, more closely linked to one's self-concept (Trope & Liberman, 2003).

In addition, Carter and Gilovich (2012) highlighted individual differences in materialism as predicting people's likelihood of attributing experiences to their self-image, as measured by the Material Values Scale (MVS; Richins & Dawson, 1992). According to Richins and Dawson (1992), materialists tend to define themselves through their possessions by considering possessions to be central in their lives, and attributing success and happiness to the material goods they own. Those who are more materialistic tend to indulge in more material possessions as they believe that possessions and money are essential for one's happiness and social progress (Ward & Wackman, 1971). Therefore, individual differences in materialism may moderate the relationship between the two types of purchase (i.e., material and experiential purchases) and self.

Chosen Study for Replication: Carter and Gilovich (2012)

We chose the article by Carter and Gilovich (2012) for replication based on its impact and the absence of direct replications.

Carter and Gilovich (2012)'s article has had an impact on scholarly research in the area of consumer behavior, social cognition, and judgment and decision-making. At the time of writing (November 2022), there were 476 Google Scholar citations of the article and many important follow-up theoretical and empirical articles. Some examples are Caprariello and Reis's (2013) research showing that experiences are preferred to material possessions when experiences involve others, Zhang et al.'s (2014) study demonstrating that individual differences in buying tendencies affected the happiness gained from experiential and material purchases, and Lee et al.'s (2018) study on the role of social class in happiness in experiential purchases versus material possessions.

The phenomenon demonstrated has the potential for practical implications for both personal everyday life and commercial domains. With better knowledge of the associations between experiential and material purchases and self-identity, individuals may aim to overcome the cognitive and behavioral focus on material purchases as a way to affirm their self-identities and instead shift to exploring balancing with more experiential purchases. There are also potential marketing insights, to invest in consumer experience and integrate the understanding that experiences constitute an important aspect of consumer satisfaction with product consumption (Zauberman et al., 2009).

A meta-analysis by Weingarten and Goodman (2020) that summarized over 141 studies, including Carter and Gilovich's (2012), found that consumers gained more happiness through experiential purchases than material possessions, $d = 0.39$, 95% CI [0.34, 0.43]. However, the meta-analysis also pointed out that many of the studies in the literature were underpowered, which raises the importance of well-powered independent replications of the phenomenon.

To the best of our knowledge, there are currently no published direct replications of this article. Given the impact of Carter and Gilovich's research, and in response to the growing attention in psychological science for reproducibility and replicability, we revisited the classic phenomenon of Carter and Gilovich's studies by conducting an independent, well-powered, pre-registered, and very close replication (e.g., Brandt et al., 2014; Open Science Collaboration, 2015; Van't Veer & Giner-Sorolla, 2016; Zwaan et al., 2018).

Findings in Original Article and Hypotheses

Carter and Gilovich (2012) conducted seven studies on the differential centrality of experiential and material purchases to the self, with the overarching hypothesis that experiential purchases are more closely associated with the self than material purchases. Of those, we chose to replicate Studies 3A, 3B, 3C, and 5 given their simplified design, better methodological transparency and clarity, and higher feasibility for our intended target online sample. In contrast to the chosen studies, Studies 1, 2 and 4 required manual drawings that were difficult to be conducted on an online platform, required multiple raters for data analysis, and had less complete information about their process, which impeded reproduction and replication. We felt that these studies would best be examined following a successful replication of the baseline phenomenon.

Studies 3A, 3B, and 3C had within-subjects designs in which participants recalled both an experiential purchase and a material purchase and then compared the two types of purchases on how informative these were about a person's true self. They found that people tend to view experiential purchases as providing greater insights into one's true self than material purchases. Study 5 used a between-subjects design where participants imagined deleting the memory of either an experiential or a material purchase, and then rated the perceived change to their true self and

Table 1. Replication Hypotheses

Study	Hypothesis	Description
3A	H1	Knowledge of one's experiential purchases is perceived as providing greater insight into one's true self than knowledge of one's material purchases.
3B	H2	Knowledge of a stranger's experiential purchases is perceived as providing greater insight into the stranger's true self than knowledge of the stranger's material purchases.
3C	H3	Knowledge of new others' experiential purchases is perceived as providing greater insight than new others' material purchases (such as when getting to know someone new).
5	H4	Deletion of experiential purchases memories is considered as having a bigger impact on self-concept than deletion of material purchases memories.
5	H5	Deleting memories of experiential purchases (vs. material purchases) have a greater impact on their self-concept (H4), which is positively associated with greater satisfaction derived from experiential purchases.

their satisfaction with the purchase. They found that deletion of experiential purchases had a greater impact on one's self-concept than deletion of material purchases, which was positively associated with greater satisfaction derived from experiential compared to material purchases. We summarized the deduced hypotheses from the studies in Table 1.

Extension: Changes in Evaluations of Material and Experiential Purchases over Time

We added an extension to investigate changes in evaluations of material and experiential purchases over time. Past research has demonstrated evidence that different types of purchases elicit different extents of pleasure and regrets over time. On the one hand, satisfaction from experiential purchases tends to be more enduring than that from material purchases since the pleasure from material purchases can be easily compared with alternatives, thus undermining people's satisfaction with them (Carter & Gilovich, 2010; Van Boven & Gilovich, 2003). On the other hand, material purchases are more likely associated with regrets of actions (buyer's remorse) compared to experiential purchases that are more strongly associated with regrets of inaction (missed opportunity) (Rosenzweig & Gilovich, 2012). Since experiences tend to result in lasting satisfaction whereas material processions tend to elicit regrets on actions, we set out to include an exploratory comparison of the two on the differences between recalled evaluations of the purchases at the time of purchase compared to current evaluations. We hypothesized that over time, the evaluation of experiential purchases decreases to a less extent than that of material purchases.

Pre-registration and Open Science

We pre-registered the experiment on the Open Science Framework (OSF; https://osf.io/9vsxt/), and data collection was launched later that week. Pre-registrations, power analyses, and all materials used in these experiments are available on the OSF: https://osf.io/v2w5h/.

All measures, manipulations, exclusions conducted were reported; all studies were pre-registered and data collection was completed before analyses.

Method

Power Analysis

We conducted an a-priori power analysis with "pwr" package version 1.3-0 (Champely, 2020) to obtain the required sample size based on the reported *t* statistics and mean differences in the original article. We aimed for a statistical power of .95 and alpha of .05. Given our adjustment of the Study 5 design from a between-subjects to within-subjects design, we still used the between-subjects as a more conservative estimation.

Across the chosen studies, our power analysis indicated that we require 216 participants for Study 3A, 92 for Study 3B, 26 for Study 3C, and 162 for Study 5. Thus, the smallest sample sizes (that were also smaller than the original sample sizes) were from Studies 3B and 3C. As Study 3C had a higher sample size (i.e., 102) in the original paper than Study 3B (i.e., 101), multiplying the original sample size of Study 3C (102) by 2.5 times provided us with 255, which also exceeded the calculated sample sizes of the other studies. We rounded this number up to 300 in case of any exclusions to detect the smallest effect of replicated studies. Taking into consideration the possibility of weaker effects in replication, we aimed for high power given our allocated budget. Following Simonsohn's (2015) general rule of thumb of multiplying by 2.5, we set out data collection goal to 750. We provided our calculations and more details in the Supplementary materials.

Participants

A total of 759 American Amazon Mechanical Turk (MTurk) participants completed the study on CloudResearch/TurkPrime (Litman et al., 2017) with USD 1.00 compensation, with 743 included in the analyses after pre-registered exclusions (M_{age} = 41.39, *SD* =12.90; 343 males, 393 females, 4 others; 3 rather not disclose). We include sample exclusion criteria and compare our sample with the sample of original article in the Supplementary materials (sections "Exclusion criteria" and "Pre-exclusions versus post-exclusions").

Design and Procedure

Study 3A had two parts, purchase recalls (3A-1), and a single question comparison (3A-2). Because Studies 3A-2, 3B, and 3C from Carter and Gilovich (2012) had a very similar design, we combined the studies into a singular unified design of the studies presented in random order (Block Y). Studies 3A-1 and Study 5 also had a similar method prompting for recalls and were therefore combined into the survey with a unified within-subjects design, presented in random order (Block X). We note that Study 5 was originally a between-subjects design, yet we adjusted it to a within-subjects design with an order of appearance randomized and recorded, which allowed us to mirror the original article's between-subjects analyses by focusing on the first displayed condition.

After completing a consent form and verification checks, participants answered Block X and Block Y, in a randomized order. In Block X participants recalled both types of purchase, and for each indicated the cost, time, satisfaction (Study 3A-1), importance of purchase, willingness to exchange, happiness if exchanged, importance of memories, centrality to self, and past and current evaluations of the purchase (Study 5). In Block Y, participants compared material and experiential evaluations for self (Study 3A), strangers (Study 3B), and a new person (Study 3C).

Studies 3A-2, 3B, 3C (Block Y)

We provided details of the measurements used in Studies 3A-2, 3B, and 3C in Table 2. In each sub-study of Study 3, participants were asked to imagine different perspectives and indicated whether experiential or material purchases provided greater insight into a person's true self. The scenario in Study 3A-2 was related to a stranger's perspective on the participant (1 = *Material purchases*; 9 = *Experiential purchases*). In Study 3B, the scenario shifted to the participant's perspective of a stranger. Finally, in Study 3C, the scenario was based on the participant meeting a new person that could be potentially important in the participant's life. The questions in 3B and 3C were on a 0 (material) to 100 (experiential) scale.

Additionally, we measured individual differences in materialism using the 15-item MVS (Richins, 2004). Participants rated statements related to materialism and material consumption on a 5-point scale (1 = *Strongly disagree*, 5 = *Strongly agree*). Higher scores indicate more personality variables related to materialism traits and a greater orientation towards materialism.

Study 5 and Study 3A-1 (Block X)

We provided details of the measurements used in Studies 3A-1 and 5 in Table 3.

In Study 5 we examined the impact of participants imagining the deletion of a past purchase memory on their self-concept. Participants recalled material and experiential purchases from the past five years and indicated satisfaction with (item shared with Study 3A-1) and importance of purchase (1 = *Not at all important*, 5 = *Somewhat important*, 9 = *Extremely important*).

They then imagined that they went back in time to the past and had an opportunity to change the recalled memory. They indicated their willingness to make such a change (1 = *Absolutely not*, 9 = *Definitely*), their happiness if they did so (1 = *Much less happy*, 9 = *Much happier*), the importance of the recalled memory (1 = *Not at all important*, 9 = *Very important*), and the perceived change to their self-concept if they made that change (1 = *Not at all*, 9 = *A great deal*).

Extension: Past and Current Purchase Evaluations

We added an extension to Block X with two items per each purchase type aimed to investigate whether people's evaluations of material and experiential purchases change differently over time.

Participants were asked about their feelings towards a recollected purchase. Participants reported their recalled feelings at the time of purchase ("Please rate how you felt about the material/experiential purchase you had recalled back then, at the time of purchase?") and how they currently feel about their past purchases ("Please rate how you feel about the material/experiential purchase you had recalled now?") (-5 = *Very negative*, 0 = *Neutral*, 5 = *Very positive*).

Deviations from the Original Articles

We summarized the replication as "close" using the criteria by LeBel et al. (2018; see Supplementary for details). The classification of the replications compared to the originals are summarized in Table 4.

Results

We first conducted *t*-tests and Pearson's *r* correlation analyses following the original article's analyses. We provided descriptive statistics of all studies in Table 5.

We added several extensions to the original article. First, we extended the correlational analysis of MVS and type of purchase ratings to Study 3A, going beyond the original analyses applied to Study 3B and Study 3C. Second, both a between-subjects design and within-subjects design analysis were performed for Study 5 as a comparison to the between-subjects design analysis in the original article. Third, we further added correlation and partial correlation analyses to test whether greater satisfaction derived from experiential purchases was positively correlated with one's self-concept affected by the willingness to exchange memories. Lastly, we compared current and past evaluations of material and experiential purchases to examine differences in change over time.

Study 3A-2 Replication: Insight into Self (Block Y)

We conducted a one-sample t-test (two-tailed) against the scale midpoint of 5. Consistent with H1, we found that a person with experiential purchase knowledge is perceived to have a greater insight into one's true self than a person

Table 2. Studies 3A-2, 3B, and 3C replications (Block Y): Design

	Individual differences Material Values Scale (Richins, 2004)
Study 3A part 2	Evaluation of **self** by purchase types Please imagine two people, one of whom knew all about your material purchases (Person M), and the other knew all about your experiential purchases (Person E), but neither knew anything else about you. Which person would better know the real you, your true, essential self? (1 = *Definitely Person M (material)*, 5 = *Both equally*, 9 = *Definitely Person E (experiential)*). [Analysis: One sample *t*-test against scale midpoint of 5]
Study 3B	Evaluation of **stranger** by purchase type "Please imagine there were two people, strangers to you, and you knew all about one person's experiential purchases (Person E) and knew all about the other person's material purchases (Person M) but knew nothing else about either person. Which person do you think you would know better? In other words, would you have greater insight into Person M or Person E's true, essential self? (0 = *Person M (material)*, 100 = *Person E (experiential)*). [Analysis: One sample *t*-test against scale midpoint of 50]
Study 3C	Evaluation of **new person** by purchase types Please imagine that you are going to be meeting a new person who might be important in your life (such as a blind date, or maybe you've been assigned to work on a project together), and you can learn just one thing about this person beforehand, either about their material possessions, or about the experiences they've purchased. Please rate how much you would rather know about their material possessions or experiences in the following scenarios: - Which information would provide more insight into other person's true self? - Which information would be most useful upon meeting the individual? - Which information would be more fun to talk about? (0 = *Definitely their possessions*, 100 = *Definitely their experiences)* [Analysis: One sample *t*-test against scale midpoint of 50 for each sub-question]

Note. We provided more detailed information in the Supplementary.

with material purchase knowledge (M = 6.43, SD = 2.22, t(742) = 17.61, p < .001, d = 0.65, 95% CI [0.57, 0.73]).

We extended the analysis of the original article and conducted Pearson's *r* correlation analysis between the MVS (α = .92) and ratings of the purchase type in providing insights into the participant's true self. We found support for a negative correlation between MVS and Study 3A scores ($r(741) = -0.20$, $p < .001$, 95% CI [-0.27, -0.13]). That is, people who rated higher on trait materialism were less likely to believe that knowing one's experiences would provide greater insight into one's true nature.

Study 3B Replication: Insight into Other (Block Y)

We conducted a one-sample *t*-test (two-tailed) against the scale midpoint of 50. Since the rating was heavily left-skewed (skewness = -1.12, *SE* = .09), we also ran the analysis on the data with square transformation. However, as we found support for the hypotheses regardless of whether the transformation was conducted, we reported untransformed data for the convenience of comparison with the original study. Analyses for the transformed data analysis can be found in the Supplementary.

We found support for H2 that knowledge of a stranger's experiences was perceived to give participants greater insight into the stranger's true self than knowledge of possessions ($M = 72.08$, $SD = 25.08$), $t(742) = 24.00$, $p < .001$, $d = 0.88$, 95% CI [0.80, 0.96].

In addition, a Pearson's *r* correlation analysis showed that responses to the MVS were negatively correlated with the scores from Study 3B, $r(741) = -0.19$, $p < .001$, 95% CI [-0.26, -0.12]. That is, people who rated higher on trait materialism were less likely to believe that knowing the experiences of a person would provide greater insight into the person's true self.

Study 3C Replication: Insight into a New Person (Block Y)

We conducted a one-sample *t*-test against the scale midpoint of 50 for each of the sub-questions in Study 3C. Since the scores were heavily left-skewed ($\text{skewness}_{\text{insight}} = -1.17$, $SE = .09$; $\text{skewness}_{\text{useful}} = -1.23$, $SE = .09$, $\text{skewness}_{\text{fun}} = -2.03$; $SE = .09$), a cubic transformation was performed. However, as we found support for the hypotheses regardless of whether the transformation was conducted, we reported untransformed data for the convenience of comparison

Table 3. Study 3A-1 and Study 5 replications (Block X): Design

IV1: Experiential Condition (Within)	**IV1: Material Condition (Within)**
IV1: Recollection of an experiential purchases	IV1: Recollection of a material purchase
Participants to recall and describe a past experiential purchase made within the past 5 years	Participants to recall and describe a past material purchase made within the past 5 years
IV2: Exchange memory of recollected experiential purchase	IV2: Exchange memory of recollected material purchase
Scenario on the replacement of current memory of experiential purchase keeping everything else in the participant's life unchanged	Scenario on the replacement of current memory of material purchase keeping everything else in the participant's life unchanged

Replication Dependent Variables

Importance and satisfaction of past purchase

"How satisfied you are with the material purchase you had recalled." (Shared for Study 3A-1 and 5)
"How important the material purchase you had recalled is to you." (Study 5)
(1 = *Not at all satisfied/important*, 9 = *Extremely satisfied/important*).
[Analysis: Independent Welch's *t*-test on the first appearance condition and paired *t*-test.]

Impact of memory exchange on self-concept (Study 5)
"How willing would you be to make such an exchange of this memory? "
(1 = *Absolutely not*, 9 = *Definitely*).

"How much happier would you be if you made such an exchange?"
(1 = *Much less happy*, 9 = *Much more happy*)

"How important are your current memories to you?" (reversed)
(1 = *Not at all important*, 9 = *Very important*)

"To what degree such an exchange would alter who you are?" (reversed)
(1 = *Not at all*, 9 = *A great deal*).

[Aggregate: The mean of the sum of scores for the four questions in Study 5 was used to create an "exchange" index; higher scores indicated a greater willingness for memory exchange.]

[Analysis: Independent Welch's *t*-test on the first appearance condition, supplemented by a paired *t*-test.]

Note. Within refers to within-subjects design. IV refers to independent variable. DV refers to dependent variable. Recall was grouped with Study 3A so that participants only recollected their purchases once. See Table 2 in Study 3A row.

with the original study. Analyses for transformed data can be found in the Supplementary.

In the case of meeting someone new, we found that a person's experience was perceived to provide greater insight into a person's true self, (M = 76.35, SD = 23.37), $t(742) = 30.74$, $p < .001$, $d = 1.13$, 95% CI [1.04, 1.22], that a person's experience was perceived to be more useful, (M = 76.27, SD = 23.04), $t(742) = 31.08$, $p < .001$, d =1.14, 95% CI [1.05, 1.23], and that a person's experience was perceived to be more fun to talk about, (M = 85.10, SD = 17.95), $t(742)$ = 53.32, $p < .001$, $d = 1.96$, 95% CI [1.83, 2.08] than their material purchases. Thus, the H3 was supported.

We also conducted Pearson's r correlation analyses in the case of meeting a new person and found that responses to the MVS were negatively correlated with knowledge of experiences providing greater insight into a person, $r(741)$ = -0.15, p <.001, 95% CI [-0.22, -0.08], knowledge of experiences being more useful, $r(741)$ = -0.20, $p < .001$, 95% CI [-0.26, -0.13], or that knowledge of experiences would be more fun to talk about, $r(741)$ = -0.22, $p < .001$, 95% CI [-0.29, -0.15]. That is, when meeting someone new, people who rated higher on trait materialism were less likely to believe that knowing the experiences of a person would provide greater insight into the person's true self, be more useful to know the person and be more fun to talk about. We summarized the correlational analyses in Table 6.

Study 5 and Study 3A-1 Replications (Block X)

To replicate Study 3A examining satisfaction of purchases based on the recalls of both experiential and material purchases, we ran a two-tailed paired t-test and found that participants were more satisfied with experiential purchases (N = 743, M = 8.10, SD = 1.31) than material purchases (M = 7.92, SD = 1.28), $t(742) = 3.15$, $p = .002$, $d = 0.15$, 95% CI [0.07, 0.22].

To replicate Study 5's within-subjects design, we first separated the data into experiential and material conditions based on the first condition seen by participants to replicate the between-subjects design conducted by the original article. After averaging the scores of four memory exchange items, we created a composite "memory exchange index" (please refer to the Supplementary for Cronbach Alpha of different conditions) to represent the willingness to replace memories of past purchases with new memories.

Table 4. Classification of the Replication, Based on LeBel et al. (2018)

Design facet	Replication	Details of deviation
Effect/hypothesis	Same	
IV construct	Same	
DV construct	Same	
IV operationalization	Same	
DV operationalization	Similar	In Studies 3A-3C, we did not randomly flip the order of choice (i.e., 1=Person E vs. 9=Person E), to keep this consistent across all studies. We consider this a minor technical more conservative deviation.
IV stimuli	Similar	Minor adjustments in Studies 3A, 3B and 5 by including "material" and "experiential" in the description and scales for clarity. In Study 5, a within-subjects design was conducted instead of a between-subjects design to provide a contrast between the two designs.
DV stimuli	Similar	Minor changes to wordings to combine Studies 3A and 5 recall questions by using "extremely" instead of "very".
Procedural details	Different	We used a unified design and the same sample for all studies instead of running separate surveys. We compensated participants with monetary payment, which was different from the original article.
Population (e.g., age)	Different	We recruited US American participants on Amazon MTurk. The original was conducted at the Chicago's Museum of Science and Industry or Cornell University Students.
Physical settings	Different	We used an online survey (Qualtrics), whereas some of the original studies used physical surveys.
Contextual variables	Different	Original study was conducted in 2012 whereas this study was conducted in 2021, but other factors (culture, language) are similar.
Replication classification	Close replication	

We ran an independent Welch's *t*-test (two-tailed) comparing the material and experiential exchange indexes and found support for H4. That is, deleting experiential purchase memories was believed to have a greater impact on one's self-concept, such that participants in the material condition (M = 4.75, SD = 1.36, N = 393) were more willing to exchange their memories than participants in the experiential condition (M = 4.22, SD = 1.33, N = 350), $t(741)$ = 5.36, $p < .001$, d = 0.39, 95% CI [0.25, 0.54]. In addition, participants in the experiential condition were more satisfied with their purchase (M = 8.21, SD = 1.21, N = 350), than participants in the material condition, (M = 8.00, SD = 1.11, N = 393), $t(741)$ = 2.51, p = .01, d = 0.18, 95% CI [0.04, 0.33].

We extended Study 5's analysis of the original article and conducted two-tailed paired *t*-tests based on a within-subjects design. Consistent with the results of between-subjects analyses, participants were more willing to exchange their memories of material purchases (M = 4.90, SD = 1.42, N = 743) than their memories of experiences (M = 4.11, SD = 1.44, N = 743; $t(742)$ = 12.24, $p < .001$, d = 0.55, 95% CI [0.47, 0.62]). Additionally, as reported in Study 3A, participants were more satisfied with experiential purchases (M = 8.10, SD = 1.31, N = 743) than material purchases (M = 7.92, SD = 1.28, N = 743), $t(742)$ = 3.15, p = .002, d = 0.15, 95% CI [0.07, 0.22].

We conducted two correlational analyses and found support for H5 that the greater satisfaction derived from experiential purchases was negatively associated with the willingness to exchange memory. First, a Pearson's *r* correlation analysis between the exchange index of experiential purchases and satisfaction of experience purchases revealed that the exchange index was negatively correlated with satisfaction, $r(348)$ = -0.34, $p < .001$, 95% CI [-0.43, -0.24]. Second, we further conducted a Pearson's *r* partial correlation analysis between the two items while controlling for the satisfaction of material purchases. The result also showed a negative correlation, $r(348)$ = -0.36, $p < .001$, 95% CI [-0.45, -0.26], which confirmed findings of Pearson's *r* correlation analysis.

Extension: Past and Current Feelings Regarding Purchases (Exploratory)

We added an exploratory extension comparing changes in evaluations of material purchases and experiential purchases over time. We conducted a 2 (purchase type: material vs. experiential) × 2 (feeling time: current vs. past) within-subjects two-way ANOVA and found support for the main effects of purchase type and time. Overall, participants rated past feelings (M = 3.24, SD = 1.95) as more positive than current feelings (M = 2.66, SD = 2.24; $F(1, 742)$ = 101.10, $p < .001$, η^2p = 0.12, CI[0.08, 0.17]), and perceived experiential purchases (M = 3.21, SD = 2.09) as more positive than material purchases (M = 2.69, SD = 2.12; $F(1, 742)$ = 54.70, $p < .001$, η^2p = 0.07, CI[0.04, 0.11])

We also found support for an interaction between purchase type and feeling type ($F(1, 742)$ = 5.54, p = .019, η^2p = 0.01, CI[0.00, 0.02]). Participants' current evaluation of experiential purchases (M_{now} = 2.97, SD_{now} = 2.21; M_{past} = 3.45, SD_{past} = 1.93) decreased to a lesser extent than that

Table 5. Descriptive Statistics for All Replication Conditions

Design: Study	One Sample T-Test		Experiential purchase		Material purchase		Effect
	M	*SD*	*M*	*SD*	*M*	*SD*	
Block Y: Studies 3A-2, 3B, and 3C							
Study 3A-2: Insight into self	6.43	2.22	-	-	-	-	0.65 [0.57, 0.73]
Study 3B: Insight into a stranger	72.08	25.08	-	-	-	-	0.88 [0.80, 0.96]
Study 3C: Insight into a new person	76.35	23.37	-	-	-	-	1.13 [1.04, 1.22]
Study 3C: Usefulness	76.27	23.04	-	-	-	-	1.14 [1.05, 1.23]
Study 3C: Fun	85.10	17.95	-	-	-	-	1.96 [1.83, 2.08]
Block X: Study 3A-1 and Study 5							
Studies 3A-1 & 5: Satisfaction [replication] (between-subjects on first condition mirroring original's analysis)	-	-	8.21	1.21	8.00	1.11	0.18 [0.04, 0.33]
Studies 3A-1/5: Satisfaction [extension] (within-subjects design)	-	-	8.10	1.31	7.92	1.28	0.15 [0.07, 0.22]
Study 5: Importance [replication] (between-subjects on first condition mirroring original's analysis)	-	-	7.32	1.82	6.80	1.75	0.29 [0.14, 0.43]
Study 5: Importance [extension] (within-subjects design)	-	-	7.33	1.88	6.71	1.93	0.25 [0.18, 0.32]
Study 5: Memory exchange willingness [replication] (between-subjects on first condition mirroring original's analysis)	-	-	4.22	1.33	4.75	1.36	0.39 [0.25, 0.54]
Study 5: Memory exchange willingness [extension] (within-subjects design)	-	-	4.11	1.44	4.90	1.42	0.55 [0.47, 0.62]
Block X: Extension							
Purchase evaluations (now)	-	-	2.97	2.21	2.35	2.23	0.28 [0.21, 0.36]
Purchase evaluations (past)	-	-	3.45	1.93	3.04	1.95	0.21 [0.14, 0.28]

Note. M refers to mean; *SD* refers to standard deviation. Effect = Cohen's d/ η^2p. For replications, one-sample converted to Cohen's d and comparisons between one-sample, within, and between Cohen's *d* effects should be interpreted with caution. In a between design: experiential n = 350 and material n = 393). In a one-sample and within-design: N = 743. For extension, η^2p is calculated with statistic from repeated measure two-way ANOVA.

Table 6. Summary of Correlational Analysis Between MVS and Study Factor

Study	Factor	Effect	CIL	CIH	*p*
3A	True nature of self	-0.20	-0.27	-0.13	< .001
3B	True nature of a stranger	-0.19	-0.26	-0.12	< .001
3C	True nature of a new person	-0.15	-0.22	-0.08	< .001
3C	Usefulness	-0.20	-0.26	-0.13	< .001
3C	Fun	-0.22	-0.29	-0.15	< .001

Note. Effect = Pearson's *r* coefficient. CIL = lower bounds of 95% confidence intervals. CIH = higher bounds of 95% confidence intervals. Degrees of freedom for all = 741.

Table 7. Feelings: Time and Purchase Type interaction

Effect	*F*	*p*	η^2p *and 95% CI*
Time: Now versus time of purchase	101.10	< .001	0.12 [0.08, 0.17]
Purchase Type: Material versus experiential	54.70	< .001	0.07 [0.04, 0.11]
Feeling Time × Purchase Type interaction	5.54	0.019	0.01 [0.00, 0.02]

Note. Repeated measures two-way ANOVA. Dependent variable = Positivity of the purchase measured on a 11-point scale (-5 = *very negative*, 0 = *neutral*, 5 = *very positive*). Degrees of freedom = 1, 742.

of material purchases (M_{now} = 2.35, SD_{now} = 2.23; M_{past} = 3.04, SD_{past} = 1.95). We summarized descriptive statistics and statistical tests in Table 5 and Table 7, respectively.

Summary of Findings

In sum, both between-subjects design and within-subjects design support our hypotheses. Participants were less willing to exchange their experiential purchase memories than material purchase memories. Also, deleting memories of experiential purchases (vs. material purchases) had a greater impact on their self-concept, which was positively associated with greater satisfaction derived from experiential purchases. The effect size of between-subjects design on willingness to exchange memories, d = 0.39, was smaller and below the range of confidence intervals of that of within-subjects design, d = 0.55, 95% CI [0.47, 0.62]. Similarly, the effect size of between-subjects design on the association between the willingness to exchange experiential memories and satisfaction with experiential purchases, r = -0.34, was smaller and below the range of confidence intervals in the correlation analysis compared to that of within-subjects design (r(741) = -0.43, 95% CI [-0.49, -0.37]), as well as in the partial correlation analysis, r = -0.36, compared to the within-subjects design's effect size (r(741) = -0.44, 95% CI [-0.50, -0.38]).

Comparing Replication to Original Findings

For all our chosen studies, we were able to successfully replicate the original findings. For Studies 3A, 3B, and 3C, the replication effect sizes were larger than the original findings, and the replication range of confidence intervals did not cover the original effect size point. For Study 5, the replication effect sizes were smaller than the original findings, and the replication range of confidence intervals did not cover the original effect size point. A comparison of the statistical tests of replication and original effects is in Table 8.

Discussion

In a unified design replication of four studies reported in Carter and Gilovich (2012), we found strong support for the core hypotheses that experiential purchases were more closely associated with the self, which leads to higher satisfaction in experiential purchases than material purchases. In Studies 3A, 3B, and 3C, we found that knowledge of experiential purchase was perceived to provide greater insight into a person's true self, a stranger's true self, and as more useful, insightful, and fun to know when meeting someone new. With both between-subjects analyses and the extended within-subjects analyses in Study 5, we found that deleting experiential purchase memories would have a greater impact on self-concept than material purchase memories, and that the willingness to exchange memories was negatively associated with experiential purchase satisfaction. We also added an extension and found that experiential purchases were evaluated more positively than material purchases, that evaluations of material and experiential purchases declined over time, and that the decline for experiential purchases was weaker than that of material purchases.

Our findings contribute in several ways to the growing research about purchase types, the self, and satisfaction levels (Caprariello & Reis, 2013; Carter & Gilovich, 2010; Van Boven & Gilovich, 2003). First, our study supported the original research with a high-powered diverse sample and mostly found effects consistent with and larger than in the original (above d = 0.8 for Studies 3B and 3C, exceeding 0.38 and 0.74 reported in the original research). Previous research demonstrated that the disappointment that people feel during an event was short-lived and dissipated quickly, leaving one with a rosy retrospection (Mitchell et al., 1997). In contrast, people often adapt to features of

Table 8. Summary of Statistical Tests and Comparison with Original Effect Sizes

	t	*df*	*p*	Replication Effect and CI	Original Effect and CI	Interpretation
Study 3 - One sample *t*-test (two-tailed)						
3A: Insight into self	17.61	742	< .001	*d* = 0.65 [0.57, 0.73]	*d* = 0.37 [0.19, 0.55]	Signal/inconsistent/larger
3B: Insight into a stranger	24.00	742	< .001	*d* = 0.88 [0.80, 0.96]	*d* = 0.38 [0.18, 0.58]	Signal/inconsistent/larger
3C: Insight into a new person	30.74	742	< .001	*d* = 1.13 [1.04, 1.22]	*d* = 0.74 [0.52, 0.96]	Signal/inconsistent/larger
3C: Usefulness	31.08	742	< .001	*d* = 1.14 [1.05, 1.23]	*d* = 0.74 [0.52, 0.96]	Signal/inconsistent/larger
3C: Fun	53.32	742	< .001	*d* = 1.96 [1.83, 2.08]	*d* = 0.74 [0.52, 0.96]	Signal/inconsistent/larger
Study 5 - Independent Welch's *t*-test (two-tailed)						
Impact of memory exchange	5.36	741	< .001	*d* = 0.39 [0.25, 0.54]	*d* = 0.75 [0.22, 1.27]	Signal/inconsistent/smaller
Satisfaction	2.51	741	.01	*d* = 0.18 [0.04, 0.33]	*d* = 0.57 [0.05, 1.08]	Signal/inconsistent/smaller
Importance	3.93	741	<.001	*d* = 0.29 [0.14, 0.43]	Not reported	Signal
Study 5 - Paired *t*-test (two-tailed)						
Impact of memory exchange	12.24	742	< .001	*d* = 0.55 [0.47, 0.62]	Not reported	Signal
Satisfaction	3.15	742	.002	*d* = 0.15 [0.07, 0.22]	Not reported	Signal
Importance	6.79	742	<.001	0.25 [0.18, 0.32]	Not reported	Signal
Study 5 - Pearson's *r* correlation analysis						
Association of exchange and satisfaction (between-subjects design)	-	348	< .001	*r* = -.34 [-.43, -.24]	Regression analysis	Signal, same direction
Association of exchange and satisfaction (within-subjects design)	-	741	< .001	*r* = -.43 [-.49, -.37]	Not reported	Signal
Study 5 - Pearson's *r* partial correlation analysis						
Association of exchange and satisfaction (between-subjects design)	-	348	< .001	*r* = -.36 [-.45, -.26]	Not reported	Signal
Association of exchange and satisfaction (within-subjects design)	-	741	< .001	*r* = -.44 [-.50, -.38]	Not reported	Signal

Note. Overall sample size: *N* = 743, *n* = 350 in experiential condition, *n* = 393 in material condition. Effect = Cohen's *d* or Pearson's *r* correlation coefficient. All confidence intervals in brackets are 95%. The interpretation of outcome is based on LeBel et al. (2019): signal refers to replication CI of effect sizes not containing 0, consistency refers to replication CI's inclusion of original effect size point, smaller/larger refers to the magnitude of replication effect size in the same direction compared to original effect size.

material possessions, and thus, the pleasure derived from them decreases over time (Frederick & Loewenstein, 1999; Van Boven, 2005). Our research replicated Carter and Gilovich's findings and pointed out that the reason behind the positive association between experiential purchases and satisfaction levels is related to one's self-concept. We demonstrated that experiential purchases have a greater impact on self-concept than material purchases, which is positively associated with satisfaction of purchases in the experiential condition.

We also found that experiential purchases were perceived as more positive and that these positive evaluations declined less over time than material purchases. This aligns with prior research that satisfaction from experiential purchases tends to be more enduring than that from material purchases (Carter & Gilovich, 2010; Rosenzweig & Gilovich, 2012; Van Boven & Gilovich, 2003).

Limitations and Future Directions

Our replication had some limitations which suggest several directions for future research. First, one limitation of the current investigation is related to the generalizability of our sample, where the majority classified themselves to be from working to middle-class income families in the United States. We asked participants to recall purchases of at least USD 50, and participants were expected to have discretionary income that allows them to afford such purchases. Therefore, it is possible that findings would differ for more diverse and non-WEIRD populations (Western, Educated, Industrialized, Rich, and Democratic; Henrich et al., 2010). Future research could examine the effect in other countries and broader demographics to examine purchases of lower monetary amounts.

Second, there is an implicit assumption of a shared clear interpretation of the definition of material or experiential purchases, yet the boundaries between experiential and material purchases are not always clear. For example, certain goods may lie in between these two categories due to the experience they provide despite being physical objects (Carter & Gilovich, 2012; Van Boven & Gilovich, 2003). Hence, it is possible that participants have different categorizations of the purchase type for the same goods, which we have observed in our experiment. Future research could counter the issue by using specific, well-defined stimuli to test the effect.

We asked participants to recall their purchases and feelings, relying on participants' ability to reconstruct their memories. Retrospective reports and evaluations may be affected by memory and feelings regarding the experiences, and thus might not accurately reflect true behaviors, cognitive and affect feelings in the past (Kahneman & Krueger, 2006; Kahneman & Riis, 2005). Future research may aim to adopt more direct measures, such as the Experiencing Sampling Method and Day Reconstruction Method, in which participants would be prompted to record their experiences, evaluations, and feelings as close as possible to the occurrence (Kahneman et al., 2004; Kahneman & Krueger, 2006; Stone & Shiffman, 2002).

Conclusion

Ten years after Carter and Gilovich (2012), we found strong support for their findings with several successful extensions highlighting differences between material and experiential purchases. We conclude these findings as a consistent reliable phenomenon and laid out several promising directions for future research.

Competing Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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Author Contributions

Michelle Chee conducted the replication as her thesis. Yiyu Chen verified, reviewed, and drafted the manuscript for submission. Gilad advised and supervised each step, conducted the pre-registrations, ran data collection, and edited the manuscript for submission.

Contributor Roles Taxonomy

In the table below, employ CRediT (Contributor Roles Taxonomy) to identify the contribution and roles played by the contributors in the current replication effort. Please refer to https://www.casrai.org/credit.html for details and definitions of each of the roles listed below.

Role	Yiyu Chen	Michelle Chee	Gilad Feldman
Conceptualization			X
Pre-registration		X	X
Data curation			X
Formal analysis		X	
Funding acquisition			X
Investigation		X	
Pre-registration peer review / verification	X		X
Data analysis peer review / verification	X		
Methodology		X	
Project administration			X
Resources			X
Software	X	X	
Supervision			X
Validation	X	X	
Visualization		X	
Writing-original draft		X	
Writing-review and editing	X		X

Data Accessibility Statement

Materials, data, and code are available on: https://osf.io/v2w5h/

Important Links and Information

Citation of the target research article:

> Carter, T. J., & Gilovich, T. (2012). I am what I do, not what I have: The differential centrality of experiential and material purchases to the self. *Journal of Personality and Social Psychology, 102*(6), 1304–1317. https://doi.org/10.1037/a0027407

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Supplementary Materials

Peer Review History

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Peer Review and Communication History

MS Title: Revisiting the Differential Centrality of Experiential and Material Purchases to the Self: Replication and extension of Carter and Gilovich (2012)

Author Names: Yiyu Chen, Xingyu (Michelle) Chee, Gilad Feldman

Submitted: Oct 3, 2022

Editor First Decision: Revise & Resubmit
Nov 20, 2022

Dear Dr. Feldman,

I have now received a review of your manuscript, "Revisiting the differential centrality of experiential and material purchases to the Self: Replication and extension of Carter and Gilovich (2012)," from an expert in judgment and decision making. I also independently read the manuscript before consulting the reviewer's comments. The reviewer and I agree that this is a well-executed and clearly reported replication. Congrats on this exellent work! The reviewer and I do not have major comments, although there are some minor ones that I think are worth implementing (see below).

I am marking this as a "revise and resubmit" so you can make those changes if you choose to. Please see the instructions below for submitting your revision.

Please ensure that your revised files adhere to our author guidelines, and that the files are fully copyedited/proofed prior to upload. Please also ensure that all copyright permissions have been obtained. This may be the last opportunity for major editing, therefore please fully check your file prior to re-submission.

If you have any questions or difficulties during this process, please contact the editorial office at editorialoffice@collabra.org.

We hope you can submit your revision within the next six weeks. If you cannot make this deadline, please let us know as early as possible.

Sincerely,

Yoel Inbar

Rating scale questions

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The study/studies in this manuscript have strong construct validity (good measures and/or manipulations of the constructs the authors wish to study). (Choose "Neutral" if this is not an empirical manuscript)					✔
The study/studies in this manuscript have strong statistical validity (appropriate statistical tests, assumptions are clear and reasonable, no statistical errors, appropriate statistical inferences, etc.). (Choose "Neutral" if this is not an empirical manuscript)					✔
The study/studies in this manuscript have strong internal validity (any causal claims or implications are well-justified, alternative explanations are thoroughly considered, etc.). (Choose "Neutral" if this is not an empirical manuscript, or no causal claims are made or even vaguely implied.)					✔
The study/studies in this manuscript have strong external validity (authors appropriately constrain their conclusions based on the limits of the generalizability of their findings to other contexts (including from lab to real world), other populations, other stimuli or measures, etc.)					✔

Open response questions

Please write your review here. The author(s) will see this review. Your identity will not be revealed to the authors unless you also include your name (i.e., sign your review) in this box. It is up to you whether to reveal your identity or not, either is fine.

This paper replicates some studies from Carter and Gilovich (2012) on people's association to their experiential and material purchases. Though the authors also conducted an extension, the submission can be characterized as a theory-free replication paper, and I evaluated it as such.

I think this paper sets a high standard for how replications should be designed, conducted, and reported. The authors describe with precision the rationale for replicating these findings and these specific studies. They presented a valid replication study, which deviated from the original in justifiable ways and extend it. Design decisions are well-justified (including power), and so are deviations from the original. Results are interpreted clearly and with nuance. The supplemental material includes further details, some of which (e.g., the section on data collection procedures) would arguably be good additions to reports of original research as well.

I do not have any substantive feedback to improve this manuscript. For a replication paper, I think this truly checks all the boxes. The paper is also written well. I only have two minor cosmetic suggestions.

While I'm very positive about making effect sizes and their associated uncertainty very explicit, it is somewhat misleading that the abstract uses effect sizes support empirical statements which are predicated on significance testing. I'd suggest to either add p-values to the brackets or to drop effect sizes. Again, this is just in the spirit of internal consistency between text and stats–it's great to read effect sizes!

At p.4 the authors explain that they chose the article by Carter and Gilovich (2012) for replication based on the absence of direct replications and its impact (which is a great rationale). Flipping the order of discussion of the two criteria would arguably mimic better a standard process to determine replication value (e.g. https://scholarlypublications.universiteitleiden.nl/access/item%3A3303412/view).

In sum, I believe this is a great example of replication paper.

Author Response
Nov 29, 2022

Reply to decision letter reviews: Carter and Gilovich (2012) replication and extension

We would like to thank the editor and reviewer for their feedback. Below we provide a detailed response and the changes that were made in the manuscript. Please note that the editor's and reviewers' comments are in bold while our answers are underneath in normal script.
A track-changes comparison of the previous submission and the revised submission can be found on: https://draftable.com/compare/ljyYHTEtjIiG

A track-changes manuscript is provided with the file: "**Collabra-RNR-carter-gilovich-2012-rep-ext-main-v1-G-trackchanges.docx**"

Response to Editor: Prof. Yoel Inbar

I have now received a review of your manuscript, "Revisiting the differential centrality of experiential and material purchases to the Self: Replication and extension of Carter and Gilovich (2012)," from an expert in judgment and decision making. I also independently read the manuscript before consulting the reviewer's comments. The reviewer and I agree that this is a well-executed and clearly reported replication. Congrats on this exellent work!

Thank you for the reviews obtained, your feedback, and the invitation to revise and resubmit.

The reviewer and I do not have major comments, although there are some minor ones that I think are worth implementing (see below).

Great. We addressed both minor issues, see our reply below.
We should note that we caught a few typos in the manuscript and corrected those as well (the title description of Study 3B and Study 3C). These had no effect on anything.
Response to Reviewer #1

This paper replicates some studies from Carter and Gilovich (2012) on people's association to their experiential and material purchases. Though the authors also conducted an extension, the submission can be characterized as a theory-free replication paper, and I evaluated it as such.

I think this paper sets a high standard for how replications should be designed, conducted, and reported. The authors describe with precision the rationale for replicating these findings and these specific studies. They presented a valid replication study, which deviated from the original in justifiable ways and extend it. Design decisions are well-justified (including power), and so are deviations from the original. Results are interpreted clearly and with nuance. The supplemental material includes further details, some of which (e.g., the section on data collection procedures) would arguably be good additions to reports of original research as well.

I do not have any substantive feedback to improve this manuscript. For a replication paper, I think this truly checks all the boxes. The paper is also written well.

Thank you very much for reviewing our work and for the supportive positive overall evaluation and opening note.

I only have two minor cosmetic suggestions.

While I'm very positive about making effect sizes and their associated uncertainty very explicit, it is somewhat misleading that the abstract uses effect sizes support empirical statements which are predicated on significance testing. I'd suggest to either add p-values to the brackets or to drop effect sizes. Again, this is just in the spirit of internal consistency between text and stats–it's great to read effect sizes!

All the effects we reported were very large, and the p values very low ($p < .001$), so we felt like repeating it for each effect is a bit repetitive. We also feel like reporting effects in the abstract is important, and a standard we aim to keep in all our work.
Therefore, to address this point, we simply added: "(all effects above were $p<.001$)", after the paragraph summarizing the replication findings.

At p.4 the authors explain that they chose the article by Carter and Gilovich (2012) for replication based on the absence of direct replications and its impact (which is a great rationale). Flipping the order of discussion of the two criteria would arguably mimic better a standard process to determine replication value (e.g. https://scholarlypublications.universiteitleiden.nl/access/item%3A3303412/view).

In sum, I believe this is a great example of replication paper.

Thank you, good suggestion. We switched the order of the discussion of these two points.

Editor Final Decision: Accept
Dec 12, 2022

Dear Dr. Feldman,

I have now had a chance to read over your manuscript "Revisiting the differential centrality of experiential and material purchases to the Self: Replication and extension of Carter and Gilovich (2012)", along with the letter describing the changes you made. Thank you for your responsiveness to the concerns that the reviewer and I raised. I am happy to say that your paper is now officially accepted for publication in Collabra: Psychology. Congratulations on this excellent work, I think it will make an important contribution to the literature and I look forward to seeing it published! I hope your experiences with Collabra: Psychology have been positive and that you will continue to consider it as an outlet for your work.

As there are no further reviewer revisions to make, you do not have to complete any tasks at this point.

You will be receiving separate correspondence regarding any production and technical comments, data deposits, as well as publication charges. We work with the Copyright Clearance Center to process any applicable APC charges. Please note that your APC transaction must be completed before your article gets published.

You will have an opportunity to check the page proofs before we publish your article. Thank you again for publishing in Collabra: Psychology.

Sincerely,
Yoel Inbar

Revisiting the differential centrality of experiential and material purchases to the Self: Replication and extension of Carter and Gilovich (2012)

Supplementary

Content

Open Science disclosures

Procedure and data disclosures

Data collection

Data collection was completed before analyzing the data.

Conditions reporting

All collected conditions are reported.

Data exclusions

Details are reported in the materials section of this document

Variables reporting

All variables collected for this study are reported and included in the provided data.

Analysis of the original article

Original article methods

Study 3A: One-sample experiment

Study 3A was a within-subject, one sample experiment against the scale midpoint design. It tested whether a stranger would know more about the participant's true self if they knew all about the participant's material purchase history (Person M) or experiential purchase history (Person E). A 9-point scale was used to measure which person would know the participant's true self more (1= *definitely Person M (material)*, 5 = *both equally*, 9 = *definitely Person E (experiential)*). Participants were also asked to recall and rate a previous purchase they had made. Satisfaction of the recalled purchase was measured using a 9-point scale (1 = *not at all satisfied*, 5 = *somewhat satisfied* and 9 = *extremely satisfied*). The scale anchors and order of Person M and E were counterbalanced.

The original study was conducted in a museum and 121 participants were recruited to complete a physical survey in exchange for candy. The majority of participants were from the American Midwest and a minority was from Alaska and Switzerland. Their age range was from 18 to 72 years old and mean age was 37.79 years. The distribution of gender was not reported. Participants were provided a description of the categories of material and experiential purchases. Then, they were provided a description of two people, Person E who knew all about the participant's experiential purchases only and Person M who knew all about their material purchases only. They were asked to rate which person would know their true self more on a 9-point scale. The scores were compared against the scale midpoint of 5 and a one sample *t*-test was conducted. Next, participants were asked to describe one experiential and one material purchase they had made at least five years ago, worth at least USD 50, and rated on a 9-point scale on how satisfied they were with the purchase. Experiential purchase satisfaction was compared with material purchase satisfaction using a paired *t*-test.

Study 3B: One-sample experiment

Study 3B was a within-subject, one sample experiment against the scale midpoint design. It was a reverse of Study 3A where participants were asked whether they would know more about the true nature of a stranger if they knew all about the stranger's material purchase history (Person M) or experiential purchase history (Person E). An analog sliding scale was used to measure which person's true self they would know better (0 = *I would have greater insight into Person M's personality*, 100 = *I would have greater insight into Person E's personality)*. The order of description and scale anchors were counterbalanced. Participants were also asked to complete the 15-item Material Values Scale (MVS; Richins, 2004). Participants were asked to rate statements related to materialism and material consumption on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). Higher scores indicate more personality variables related to materialism traits and a greater orientation towards materialism.

The original study was conducted on Amazon's Mechanical Turk (MTurk) platform and 101 participants were recruited to complete an online survey. The demographics such as nationality and age of participants were not reported. There were 61 females and 40 males. Participants were provided a description of the categories of material and experiential purchases. Then, participants were asked to imagine knowing two strangers, one whom they knew all about their material purchases or the one whom they knew all about their experiential purchases. They responded on the 0 to 100 analog sliding scale which stranger's true nature they would have greater insight into. The scores were compared against the scale midpoint of 50 and a one sample *t*-test was conducted. Next, participants were asked to complete the MVS. A correlational analysis was conducted on scores of the MVS with the scores from the analog scale.

Study 3C: One-sample experiment

Study 3C was a within-subject, one sample experiment against the scale midpoint design. It was similar to Study 3B but from the perspective of meeting a new person. Three questions were asked regarding which information, experiential or material purchase history, participants would

rather know about when meeting someone new. The first question was on which information would provide more insight into the other person's true self; the second question was which information would be most useful upon meeting the new person; and the third question was which information would be more fun to talk about. The questions were measured on a 0 to 100 analog sliding scale (0 = *definitely their possessions*, 100 = *definitely their experiences*). Participants were also asked to complete the 15-item MVS (Richins, 2004). Participants were asked to rate statements related to materialism and material consumption on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). Higher scores indicate more personality variables related to materialism traits and a greater orientation towards materialism.

The original study was conducted on Amazon's MTurk platform and 102 participants were recruited to complete an online survey. The demographics such as nationality and age of participants were not reported. There were 62 females and 40 males. Participants were provided a description of the categories of material and experiential purchases. Then, participants were asked to imagine that they were going to meet a new person who may become important in their lives. They were asked the three questions and responded on the 0 to 100 analog sliding scale regarding which information they would rather know about when meeting a new person. The scores for each question were compared against the scale midpoint of 50 and a one sample *t*-test was conducted. Next, participants were asked to complete the MVS. A correlational analysis was conducted on scores of the MVS with the scores from each question.

Study 5: Experimental Design

Study 5 was a between-subject, two condition experimental design. It tested which type of purchase memory, material or experiential, participants would be more willing to delete and which would have a greater alteration to their self-concept. Four questions were used to measure willingness of memory exchange and its impact to the self-concept. The questions were rated on a 9-point scale on how willing they were to make the memory exchange (1 = *absolutely not*, 9 = *definitely*), how much happier they would be after making the exchange (1 = *much less happy*, 9 = *much more happy*), how important current memories were to them (1 = *not at all important,* 9 = *very important*) and to what degree the exchange would alter their self-concept (1 = *not at all*, 9 = *a great deal*). Participants were also asked to recall and rate a previous purchase they had made. Satisfaction and importance of the recalled purchase was measured using a 9-point scale (1 = *not at all important/ satisfied*, 5 = *somewhat important/ satisfied* and 9 = *very important/ satisfied*).

The original study was conducted as a filler task in between other unrelated experiments with 60 Cornell University undergraduates. The demographics of participants were not reported. Participants were first asked to describe either one experiential or one material purchase they had made and to indicate its costs and duration since purchase. They were then asked to rate how important and satisfied they were with the recalled purchase. Experiential purchase satisfaction was compared with material purchase satisfaction using an independent *t*-test. Next, participants completed a survey that described a scenario in which they could replace the memory of their recalled purchase without affecting any other life circumstances. Following that, they were asked to rate the four questions on willingness, happiness, importance and degree of self-alteration on this exchange. The ratings were coded such that higher scores indicated a greater willingness to exchange. The scores of the four questions were averaged to form an "exchange" index for material and experiential conditions respectively. As it was not stated explicitly in the original article, the average of the four responses was assumed to be the mean of the sum of scores. The "exchange" indexes were compared using an independent *t*-test. Lastly, the original authors conducted a regression analysis between purchase type and satisfaction, with willingness to exchange memories as a mediator.

Independent variables

A summary of the independent variables, design, and scenario of the experiments of each study can be found in Table 1.

Table 1

Independent Variables of Chosen Studies of Original Article

Study	Independent Variable	Design	Scenario
3A	Knowledge of own purchase history	Within subjects	Scenario of two persons with knowledge of either material or experiential purchase history
3A	Recollection of own purchase	Within subjects	Recollection of past purchase made within 5 years worth at least USD 50
3B	Knowledge of stranger's purchase history	Within subjects	Scenario of knowledge of two stranger's material or experiential purchase history
3C	Knowledge of new person's purchase history	Within subjects	Scenario of meeting someone new and knowledge of the person's material or experiential purchase history
5	Memory exchange	Between subjects (experiential purchase vs. material purchase)	Scenario of exchanging memory of either material or experiential purchase
5	Recollection of own purchase	Between subjects (experiential purchase vs. material purchase)	Recollection of past purchases

Dependent variables

A summary of the dependent variables and measures of the experiment of each study can be found in Table 2.

Table 2

Dependent Variables of Chosen Studies of Original Article

Study	Dependent Variable	Measures
3A	Which purchase type would provide greater insight into participant's true self	A 9-point scale was used to measure which person would know the participant's true self more (1= *definitely Person M*, 5 = *both equally*, 9 = *definitely Person E*).
3A	Satisfaction of recollected purchase	A 9-point scale was used to measure satisfaction of recollected purchase (1 = *not at all satisfied*, 5 = *somewhat satisfied* and 9 = *extremely satisfied*).
3B	Which purchase type would provide greater insight into a stranger's true self	An analog sliding scale was used to measure which person's true self participants would know better (0 = *I would have greater insight into Person M's personality*, 100 = *I would have greater insight into Person E's personality).*
3C	Which information would be more insightful, useful and fun to know when meeting someone new	An analog sliding scale was used to measure the information (0 = *definitely their possessions*, 100 = *definitely their experiences*).
5	Willingness to exchange memory or purchase type and impact to self-concept	A 9-point scale was used to measure willingness of memory exchange (1 = *absolutely not*, 9 = *definitely*), how much happier after making the exchange (1 = *much less happy*, 9 = *much more happy*), how important current memories were (1 = *not at all important,* 9 = *very important*) and to what degree the exchange would alter the self-concept (1 = *not at all*, 9 = *a great deal*).
5	Satisfaction and importance of recollected purchase	A 9-point scale was used to measure importance and satisfaction of recollected purchase (1 = *not at all important/ satisfied*, 5 = *somewhat important/ satisfied* and 9 = *very important/ satisfied*)

Original article results

Sample size before and after exclusions

Sample descriptives of the original study can be found in Table 3. There were no reports of exclusions of data samples collected in the original article. There were no inconsistencies in the df and reported sample size in the original article's main analysis.

Table 3

Sample Description of Chosen Studies of Original Article

Study	Sample Size	Age		Gender			Location	Sample Type
		M	*SD*	Male	Female	Other		
3A	121	37.79	14.90	Unreported	65	Unreported	Chicago	General population
3B	101	Unreported		40	61	-	Unreported	Online
3C	102	Unreported		40	62	-	Unreported	Online
5	60	Unreported		25	35	-	Cornell University	Students

Note. *M* refers to mean. *SD* refers to standard deviation.

A summary of the main analysis results of the chosen studies are summarized in Table 4.

Table 4

Summary of Findings in the Original Article

Study	Test and design	*M (SD)*	*t*	Effect	*p*
3A	One sample *t*-test Within-subject design	5.85 (2.29)	4.08	0.37 [0.19, 0.55]	< .001
3B	One sample *t*-test Within-subject design	61.34 (29.56)	3.85	0.38 [0.18, 0.58]	< .001
3C	One sample *t*-test Within-subject design	72.09 (28.20), 73.59 (26.64), 79.53 (25.09)	7.5	0.74 [0.52, 0.96]	< .001
5i	Independent *t*-test Between-subject design	MC: 5.57 (1.55) EC: 4.38 (1.64)	2.88	0.74 [0.22, 1.26]	< .01
5ii	Independent *t*-test Between-subject design	MC: 7.50 (1.01) EC: 8.13 (1.20)	2.22	0.54 [0.06, 1.09]	< .04
5ii	Regression analysis Between-subject design	MC: 7.50 (1.01) EC: 8.13 (1.20)	-2.76	β=-.35 [-0.61, -0.10]	<.01

Note. *M* refers to mean. *SD* refers to standard deviation. MC refers to material condition. EC refers to experiential condition. Format of Effect = Cohen's *d* [CIL = lower bounds for 95% confidence intervals, CIH = higher bounds of 95% confidence intervals].

Effect size calculations of the original study effect

We used "MOTE" package (Buchanen et al., 2019) and "MBESS" package (Kelley, 2017) in RStudio version 4.0.3 (RStudio Team, 2020) to calculate the effect sizes and 95% confidence intervals based on the original article's *t*-test, regression analysis and descriptive statistics. All screenshots of calculations are presented in the following section for each study.

Original Study 3A

In Study 3A, participants reported that a stranger knowing about their experiential purchases would provide greater insight into their true self than knowing about their material purchases, $t(120) = 4.08$, $p < .001$, $d = 0.37$, 95% CI [0.19, 0.55].

In addition, Study 3A also reported that participants were more satisfied with their experiential purchases than material purchases, $t(120) = 3.83$, $p < .001$, $d = 0.35$, 95% CI [0.16, 0.53].

Original Study 3B

In Study 3B, participants reported that knowing about experiential purchases of a stranger would provide greater insight into that stranger's true self than knowing about their material purchases, $t(100) = 3.85$, $p < .001$, $d = 0.38$, 95% CI [0.18, 0.58].

Original Study 3C

The original article had only reported one *t*-statistic for the three questions. In Study 3C, participants reported that a person's experiences would provide greater insight into a person's true self than material purchases, that a person's experiences would be more useful to know about and more fun to talk about, $t(101) > 7.50$, $p < .001$, $d = 0.74$, 95% CI [0.52, 0.96].

Original Study 5i

In Study 5, participants reported that a person was more willing to exchange memories of material purchases than experiential purchases $t(58) = 2.88$, $p = .005$, $d = 0.75$, 95% CI [0.22, 1.27].

Original Study 5ii

In Study 5, participants reported that they were more satisfied with their experiential purchases than their material purchases, $t(58) = 2.22$, $p < .04$, $d = 0.57$, 95% CI [0.05, 1.08].

Further, a regression analysis was conducted to test if satisfaction between conditions was mediated by willingness to exchange the purchase. There was support that willingness to exchange was a predictor of satisfaction of purchase, $\beta = -.35$, $t(57) = -2.76$, 95% CI [-0.61, -0.10].

Power analysis of original study effect to assess required sample for replication

"Pwr" (Champely, 2020) package in RStudio version 4.0.3 (RStudio Team, 2020) was used to perform our power analysis for all studies. The effect size was based on Cohen's (1988) guidelines and estimated from "MOTE" (Buchanan et al., 2019) as shown in the section "Effect size calculations of the original study effects".

Original Study 3A

The best estimate for the mean differences between the ratings for experiential and material scores and the scale midpoint of 5 was $d = 0.37$, which meant that the participants felt that a person who knew about their experiential purchases would know their true selves more than a person who knew about their material purchases. To obtain a power of .95, a sample size of 97 was required.

In addition, study 3A also obtained the best estimate of ratings between satisfaction levels of experiential and material purchases of $d= 0.35$. This meant that participants were more satisfied with their experiential purchases than material purchases. To obtain a power of .95, a sample size of 108 x 2 = 216 was required.

Original Study 3B

The best estimate for the mean differences between the ratings for experiential and material scores and the scale midpoint of 50 was $d = 0.38$, which meant that the participants felt that knowing about someone's experiential purchases would give them greater insight into a stranger than knowing about their material purchases. To obtain a power of .95, a sample size of 92 was required.

Original Study 3C

The best estimate for the mean differences between the ratings for experiential and material scores and the scale midpoint of 50 was $d = 0.74$, which meant that the participants felt that knowing about someone's experiential purchases would give them greater insight into a person than knowing about their material purchases, in the case of meeting someone new. To obtain a power of .95, a sample size of 26 was required.

Original Study 5i

The best estimate for the mean differences between the experiential condition and material condition was $d = 0.75$, which meant that the participants felt that deleting experiential purchase memories would have a bigger impact on their self-concept than deleting material purchase memories. In the original Study 5, a between-subject design was used, but in our replication, a within-subject design was used instead. In our power analysis, we used the between-subject design to calculate the sample size required which was a larger number than the within-subject design. To obtain a power of .95, a sample size of 48 x 2 = 96 was required.

Original Study 5ii

The best estimate for the mean difference between the experiential condition and material condition was $d = 0.58$, which meant that the participants felt that they were more satisfied with their

experiential purchases than material purchases. To obtain a power of .95, a sample size of 79 x 2 = 158 was required.

Required sample size for replication

As we conducted a combined design of all studies in our replication, we used the largest sample size derived from the priori power analysis of Study 3C. According to Simonsohn (2015) small telescope method, the original sample size should be multiplied by 2.5 times if the sample size derived from the priori power analysis is small due to a large effect size. Across the chosen studies, the smallest sample sizes (that were also smaller than the original sample sizes) were from Studies 3B and 3C. As Study 3C had a higher original sample size of 102 than Study 3B of 101, multiplying the original sample size of Study 3C (102) by 2.5 times provided us with 255, which also exceeded the calculated sample sizes of the other studies. We rounded this number up to 300 in case of any exclusions.

With our allocated resources and to ensure high power, we used Simonsohn (2015) general rule of thumb taking 300 x 2.5 =750 as our sample goal in data collection.

Materials and scales used in the replication

Procedure

Study 3A had two parts, purchase recalls (3A-1), and a single question comparison (3A-2). Because Studies 3A-2, 3B, 3C from Carter and Gilovich (2012) had a very similar design, we combined the studies into a singular unified design of the studies presented in a random order (Block Y). Studies 3A-1 and Study 5 also had a similar method prompting for recalls, and were therefore combined into the survey with a unified within-subject design, presented in a random order (Block X). We note that Study 5 was originally a between-subject design, yet we adjusted it to a within-subject design with order of appearance randomized and recorded, which allowed us to mirror the original's between-subject analyses by focusing on the first displayed condition.

After completing a consent form and verification checks, participants answered Block X and Block Y, in randomized order. In Block X participants recalled both types of purchases, and for each indicated the cost, time, satisfaction (Study 3A-1), importance of purchase, willingness to exchange, happiness if exchanged, importance of memories, centrality to self, and past and current evaluations of the purchase (Study 5). In Block Y, participants compared material and experiential evaluations for self (Study 3A), familiar others (Study 3B), and a stranger (Study 3C).

Instructions and experimental material

Please see Qualtrics file for all details and sections of survey and survey flow: https://tinyurl.com/hny5jn5r.

SUCCESS

1. I admire people who own expensive homes, cars, and clothes.
2. Some of the most important achievements in life include acquiring material possessions.
3. I don't place much emphasis on the amount of material objects people own as a sign of success. (R)
4. The things I own say a lot about how well I'm doing in life.
5. I like to own things that impress people.

CENTRALITY

6. I try to keep my life simple, as far as possessions are concerned. (R)
7. The things I own aren't all that important to me. (R)
8. Buying things gives me a lot of pleasure.
9. I like a lot of luxury in my life.
10. I put less emphasis on material things than most people I know. (R)

HAPPINESS

11. I have all the things I really need to enjoy life. (R)
12. My life would be better if I owned certain things I don't have.
13. I wouldn't be any happier if I owned nicer things. (R)
14. I'd be happier if I could afford to buy more things.
15. It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like.

Note. R refers to items that are reverse coded.

Exclusion criteria

Generalized exclusion criteria

The default generalized exclusion criteria we use in our pre-registration is the following:

We will focus on our analyses on the full sample. However, as a supplementary analysis and to examine any potential issues, we will also determine further findings reports with exclusions. In any case, we will report exclusions in detail with results for the full sample and results following exclusions (in either the manuscript or the supplementary).

General criteria:

1. Participants indicating a low proficiency of English (self-report < 5, on a 1-7 scale).
2. Participants who self-report not being serious about filling in the survey (self-report < 4, on a 1-5 scale).
3. Participants who correctly guessed the hypothesis of this study in the funneling section.
4. Participants who have already seen or done the survey before.
5. Participants who failed to complete the survey (duration = 0, leave question blank).
6. Participants not from the United States.
7. Participants aged below 18 years old.

Specific criteria

1. Participants who answered irrelevant or illegible text in the free format questions.

Comparisons and deviations

Original versus replication

Table 5

Table 5 and 6 present the comparison between the original article and replication.

Original and Replication Comparison

	Original	Replication	Reason for change
Study design	1. Seven separate studies were conducted and each with a different pool of participants. 2. Study 5 was a between-subject design. 3. For the question about knowing people from material versus experiential purchases in study 3A to 3C, the order in which Person M and Person E were listed were counterbalanced (i.e., 1 = definitely Person M AND 9 = definitely Person M).	1. We conducted four out of seven of the original article in a single experimental design with the same pool of participants. 2. Study 5's replication was a within-subject design but we were able to do both between-subject and within-subject analysis by using the first condition seen by participants as our between-subject data. 3. The order in which Person M and Person E were listed (i.e., 1 = definitely Person M)	1. We recruited only one pool of participants in Amazon MTurk according to our resources which required us to combine all studies into one experimental design. The combination of studies allowed for very close replication. 2. By doing both between-subject and within-subject data analysis, we were able to provide insight into how the two designs would compare. 3. By only listing "1 = definitely Person M", the clarity of data analysis would improve. In addition, no evidence seems to suggest an issue of not counterbalancing the order within a single question.
Data analysis	1. Correlation analysis between MVS and purchase type ratings were only conducted for Studies 3B and 3C. 2. Independent *t*-test was conducted for Study 5 in willingness of exchange. 3. Regression analysis was conducted for Study 5 between purchase type and satisfaction levels with willingness of exchange as a mediator.	1. Correlation analysis between MVS and purchase type ratings were conducted for Studies 3A, 3B and 3C. 2. Independent *t*-test and paired *t*-test were conducted for Study 5 in willingness of exchange. 3. Correlation and partial correlation analyses were conducted for Study 5 between willingness of exchange and satisfaction.	1. To provide a more holistic picture of the relationship between materialism traits with purchase type ratings. 2. To compare the effects of between and within-subject design we conducted. 3. To test hypothesis 5 of the association between impact of exchange and satisfaction.

Procedure	1. Studies 3A and 5 physically recruited participants at Chicago's Museum of Science and Industry and Cornell University respectively. 2. A minority of participants in Study 3A were from Alaska and Switzerland. Participants in Study 5 were undergraduate students. 3. Study 3A, 3B and 3C had counterbalancing of scale anchors and order description of dependent variables. Counterbalancing was not reported in Study 5. 4. In Study 3A, participants were compensated with candy. In Study 5, undergraduate students completed the experiment as a filler task. 5. Funneling questions were not reported.	1. We recruited all participants from Amazon MTurk. 2. All participants were Americans recruited from Amazon MTurk. 3. The order of presentation of all studies and their dependent variables were randomized. 4. Monetary compensation was provided to participants. 5. We included funneling questions in our experiment.	1. We recruited one participant pool based on our resources. 2. To ensure a wider demographic sample population proficient in English. 3. To prevent order effect. 4. Procedural setting was different compared to the original article. 5. To determine if participants needed to be excluded from the experiment.
Conditions	1. In Study 3A, participants were asked to recollect a material and experiential purchase they had made. In Study 5, participants were asked to recollect either a material or experiential purchase.	1. Participants were asked to recollect a material and experiential purchase once before Study 5. There were minor changes to the wordings to combine the original Studies 3A and 5.	1. We combined the recollection section to prevent fatigue in participants and repetition in our single experimental design.
Measurements	1. In Studies 3A and 3B, the measurement only included "Person E" or "Person M". 2.In Study 3A recall questions used "extremely" in satisfaction scale.	1. We made minor changes to the wordings and included "Person E (experiential)" and "Person M (material)". 2. In Study 3A, we used "very" in satisfaction scale.	1. We made minor changes to the wordings to increase clarity. 2. To combine the recall questions for Study 3A and 5 as Study 5 used "very" in satisfaction scale.

Table 6

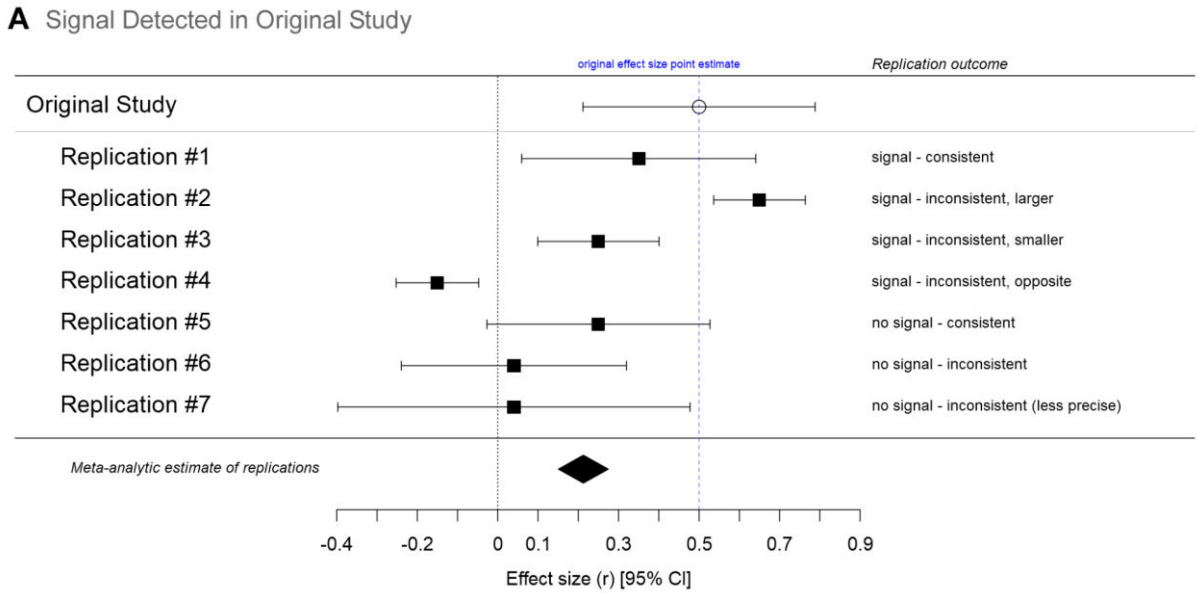
Difference and Similarities Between Original Study and Replication

	Carter & Gilovich (2012)	American MTurk workers
Sample size	Study 3A: 121 Study 3B: 101 Study 3C: 102 Study 5: 60	743 (post-exclusion)
Geographic origin	US American	US American
Gender	Study 3A: 65 females, 56 males Study 3B: 61 females, 40 males Study 3C: 62 females, 40 males Study 5: 35 females, 25 males	343 males, 393 females, 7 other/did not disclose
Median age (years)	Undisclosed	39.00
Average (mean) age (years)	Study 3A: 37.79 Study 3B, 3C, 5: Undisclosed	41.39
Standard deviation age (years)	Study 3A: 14.90 Study 3B, 3C, 5: Undisclosed	12.90
Age range (years)	Study 3A: 18 - 72 Study 3B, 3C, 5: Undisclosed	18 - 77
Medium (location)	Study 3A: Physical survey Study 3B, 3C: Computer(online) Study 5: Undisclosed	Computer (online)
Compensation	Undisclosed	Nominal payment USD 1/participant
Year	2012	2021

We conclude the study to be a very close replication according to the criteria from LeBel et al. (2019) as shown in Figure 1 and Table 7.

Figure 1

Evaluation Criteria of Replications by LeBel et al. (2019)



Note. Interpretation criteria for evaluation of replications outcomes by LeBel et al. (2019), if the original study detected a signal. A simplified replication taxonomy for comparing replication effects confidence intervals to target article original effect sizes.

Table 7

Classification Criteria of Replications by LeBel et al. (2018)

Target similarity	Highly similar			Highly dissimilar	
Category	Direct replication			Conceptual replication	
Design facet	**Exact replication**	**Very close replication**	**Close replication**	**Far replication**	**Very far replication**
Effect/hypothesis	Same/similar	Same/similar	Same/similar	Same/similar	Same/similar
IV construct	Same/similar	Same/similar	Same/similar	Same/similar	Different
DV construct	Same/similar	Same/similar	Same/similar	Same/similar	Different
IV operationalization	Same/similar	Same/similar	Same/similar	Different	
DV operationalization	Same/similar	Same/similar	Same/similar	Different	
Population (e.g. age)	Same/similar	Same/similar	Same/similar	Different	
IV stimuli	Same/similar	Same/similar	Different		
DV stimuli	Same/similar	Same/similar	Different		
Procedural details	Same/similar	Different			
Physical setting	Same/similar	Different			
Contextual variables	Different				

Note. Criteria for evaluation of replications by LeBel et al. (2018). A classification of relative methodological similarity of a replication study to an original study. “Same” (“different”) indicates the design facet in question is the same (different) compared to an original study. IV = independent variable. DV = dependent variable. “Everything controllable” indicates design facets over which a researcher has control. Procedural details involve minor experimental particulars (e.g., task instruction wording, font, font size, etc.).
"Similar" category was added to the Lebel et al. (2018) typology to refer to minor deviations aimed to adjust the study to the target sample that are not expected to have major implications on replication success. See Olsson-Collentine et al. (2020) on meta-analysis showing minor to no expected impact due to variations in sample population or setting.

Pre-exclusions versus post-exclusions

While collecting our data, we noted that 105 participants from Amazon's MTurk decided to drop out due to the free format writing tasks in our survey. We collected a total sample of 759 and after applying our exclusion criteria, 743 was used in the data analysis. Please see Table 8 for the breakdown of exclusions and Table 9 for the comparison between post-exclusion and pre-exclusion replication findings.

Table 8

Summary of Exclusions

Exclusion criteria	Number of participants fulfilling criteria
Participants indicating a low proficiency of English (self-report < 5, on a 1-7 scale).	6
Participants who self-report not being serious about filling in the survey (self-report < 4, on a 1-5 scale).	10
Participants who correctly guessed the hypothesis of this study in the funneling section.	0
Participants who have already seen or done the survey before.	0
Participants who failed to complete the survey (duration = 0, leave question blank)	3
Participants not from the United States.	0
Participants aged below 18 years old.	0
Participants who answered irrelevant or illegible text in the free format questions.	4
Number of participants who fulfilled more than one criterion above	7
Total participants excluded	16

Table 9

Comparison of Pre-exclusion and Post-exclusion Replication Findings

Study	Factor	Effect Pre-exclusion $N = 759$	Effect Post-exclusion $N = 743$
3A	Insight into self	$d = 0.64$, 95% CI [0.56, 0.71]	$d = 0.65$, 95% CI [0.57, 0.73]
3B	Insight into other	$d = 0.87$, 95% CI [0.79, 0.96]	$d = 0.88$, 95% CI [0.80, 0.96]
3C	Insight into new person	$d = 1.11$, 95% CI [1.02, 1.20]	$d = 1.13$, 95% CI [1.04, 1.22]
	Usefulness	$d = 1.12$, 95% CI [1.03, 1.21]	$d = 1.14$, 95% CI [1.05, 1.23]
	Fun	$d = 1.92$, 95% CI [1.80, 2.04]	$d = 1.96$, 95% CI [1.83, 2.08]
5	Impact of memory exchange (between-subject)	$d = 0.39$, 95% CI [0.25, 0.53]	$d = 0.39$, 95% CI [0.25, 0.54]
	Impact of memory exchange (within-subject)	$d = 0.55$, 95% CI [0.47, 0.62]	$d = 0.55$, 95% CI [0.47, 0.62]
	Correlation of exchange and satisfaction (between-subject)	$r = -0.34$, 95% CI [-0.43, -0.24]	$r = -0.34$, 95% CI [-0.43, -0.24]
	Correlation of exchange and satisfaction (within-subject)	$r = -0.43$, 95% CI [-0.48, -0.37]	$r = -0.43$, 95% CI [-0.49, -0.37]
	Partial correlation of exchange and satisfaction (between-subject)	$r = -0.36$, 95% CI [-0.44, -0.26]	$r = -0.36$, 95% CI [-0.45, -0.26]
	Partial correlation of exchange and satisfaction (within-subject)	$r = -0.44$, 95% CI [-0.49, -0.38]	$r = -0.44$, 95% CI [-0.50, -0.38]

Note. Effect = Cohen's *d* or Pearson's *r* correlation coefficient. CI = confidence interval. The interpretation of outcome is based on LeBel et al. (2019).

Pre-registration plan versus final report

Please refer to Table 10 for deviations of pre-registered plan and final report.

Table 10

Comparison of Pre-registered Plan and Final Report

Components in pre-registration	[Location / link]	Were there deviations? What type?	Details of deviation	Rationale for deviation	How might the results be different if you had/had not deviated	Date/time of decision for deviation + stage	Any additional notes
Study design		No					
Measured variables		No					
Exclusion criteria		No					
IV		No					
DV		Yes/Major	In extension, we changed the measures for long-term/in-the-moment feeling to current feeling and past feeling	The original DV "in-the-moment" feeling cannot be well measured by the extension design	The extension could not test the original DV through data analyses	After data collection.	
Data analysis	https://osf.io/9vsxt/	Yes / Major	Some r coding were changed. The data analysis for Extension was changed	To suit the data collected (For example, the sample collected for the first condition seen by participants was not evenly split and so a different code had to be used.) Since the measure of IV and DV was changed, the data analyses were changed accordingly.	I would not have been able to plot the graphs as the previous r codes assumed equal sample distribution between conditions. The extension could not test the DV through data analyses	After data collection.	

Note. Categories for deviations: Minor - Change probably did not affect results or interpretations; Major - Change likely affected results or interpretations.

Additional analyses and results

Statistical assumptions and normality tests

Normality tests were conducted for all continuous scales. When the data has the skewness greater than 1 or less than -1, the original data was transformed by taking log, square or cubic. Codes for skewness test and data transformation are provided as below.

Study 3B

Answers to the question about better knowing the self from material or experiential purchases with the continuous scale of 0 to 100. The distribution was highly skewed (-1.12) before data transformation, but became approximately symmetric (-0.40) after square transformation

Study 3C

Answers to the question about purchase type and insight into meeting a new person with the continuous scale of 0 to 100. The distribution was highly skewed for the variables, insightful (-1.17), useful (-1.23), and fun (-2.03), before data transformation, but became approximately symmetric (-0.20, -0.14, respectively) for insight and useful, and moderately skewed for fun (-0.67) after cubic transformation.

Study 3A & Study 5 & Extension

All items were measured by Likert-scale

Additional results, tables, and figures

Data transformation

We reported results after data transformation for t-tests (Table 11) and correlations (Table 12).

Table 11

Summary of One mean Comparison against Mid-point after transformation, with 0 indicating material purchases and 100 experiential purchases before transformation.

Study	Factor	Mid-point after transformation	M[SD]	*t(df)*	*d*	95% CI [CIL, CIH]	*p*
3B	True nature of stranger	2500	5824.233 [2998.351]	*t(742)* = 30.22	1.11	[1.02, 1.20]	< .001
3C	True nature of new person	125000	555113 [328584.3]	*t(742)* = 35.68	1.31	[1.21, 1.41]	< .001
3C	Usefulness	125000	550047.5 [322671.7]	*t(742)* = 35.91	1.32	[1.22, 1.42]	< .001
3C	Fun	125000	686750.8 [286367.5]	*t(742)* = 53.47	1.96	[1.84, 2.08]	< .001

Note. M[SD] = mean[standard deviation] based on the transformed data (i.e., square-transformation for Study 3B, and cubic-transformation for Study 3C). CIL = lower bounds of 95% confidence intervals. CIH = higher bounds of 95% confidence intervals.

Table 12

Summary of Correlational Analysis Between MVS and Study Factor after transformation

Study	Factor	Effect	*df*	CIL	CIH	*p*
3B	True nature of stranger	-.20	741	-.27	-.13	< .001
3C	True nature of new person	-.16	741	-.23	-.09	< .001
3C	Usefulness	-.20	741	-.27	-.13	< .001
3C	Fun	-.24	741	-.30	-.17	< .001

Note. Effect = Pearson's *r* coefficient based on the transformed data (i.e., square-transformation for Study 3B, and cubic-transformation for Study 3C). CIL = lower bounds of 95% confidence intervals. CIH = higher bounds of 95% confidence intervals.

Reliability tests

We reported the results of reliability tests of MVS and memory exchange index in Table 13. Noted that the reliability score for memory exchange index is moderately low, which suggests that the main effects could be more precise if the memory exchange have been more reliably measured. Future study could work on the scale to achieve higher consistency.

Table 13

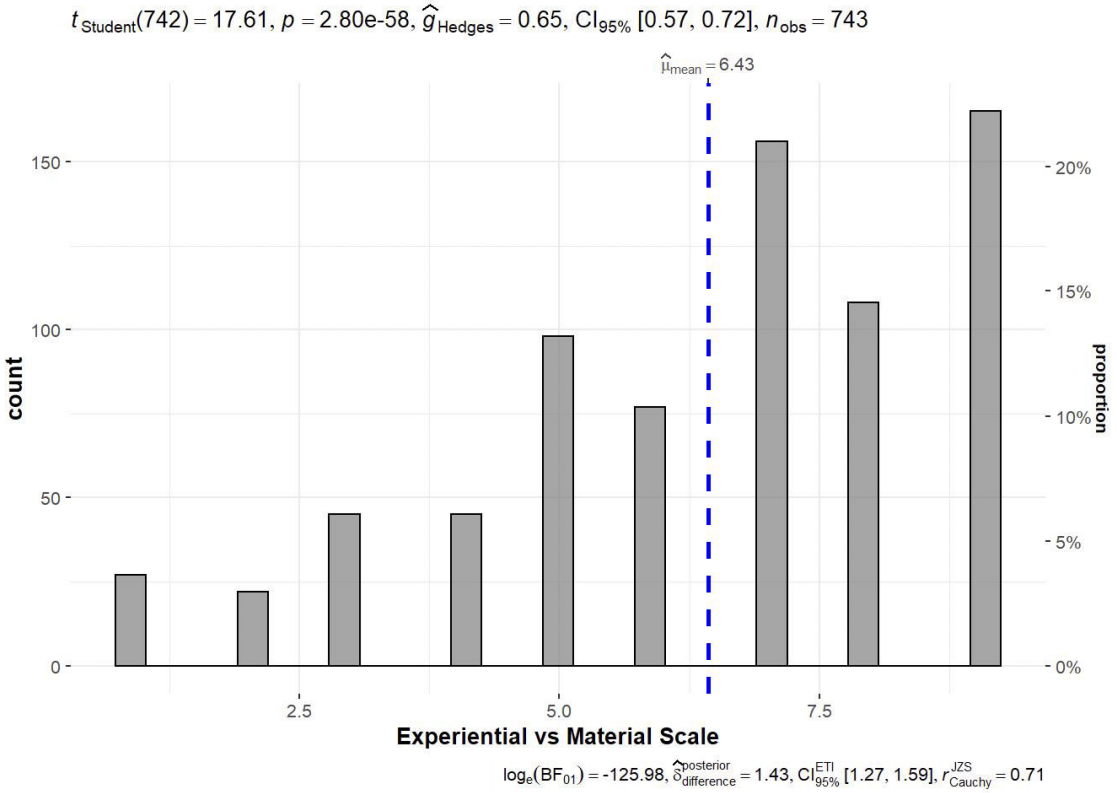
Summary of reliability test of MVS and memory exchange index

Study	Factor	Cronbach Alpha
3A-3C	MVS	.92
5	Memory exchange index – between subjects experiential condition	.37
5	Memory exchange index – between subjects material condition	.50
5	Memory exchange index – within subjects experiential condition	.51
5	Memory exchange index – within subjects material condition	.49

Additional Figures

Figure 2

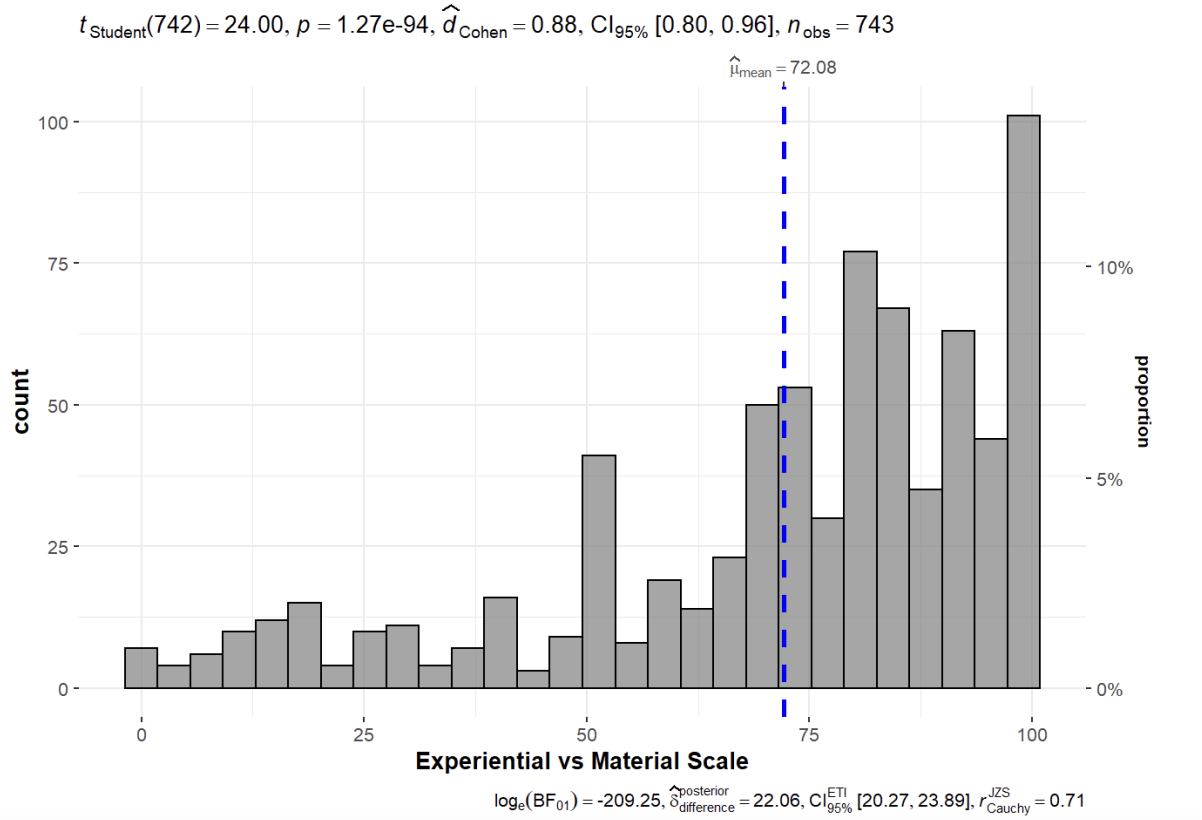
Study 3A: Purchase Type and Insight Into Participant's True Self



Note. Plot for experiential and material purchase knowledge providing greater insight into the participant's true self. The scale is from 1 = *material purchase knowledge*, to 9 = *experiential purchase knowledge;* Higher values indicate that experiential purchase knowledge would provide greater insight into the participant's true self. The "ggstatsplot" package (Patil, 2018) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 3

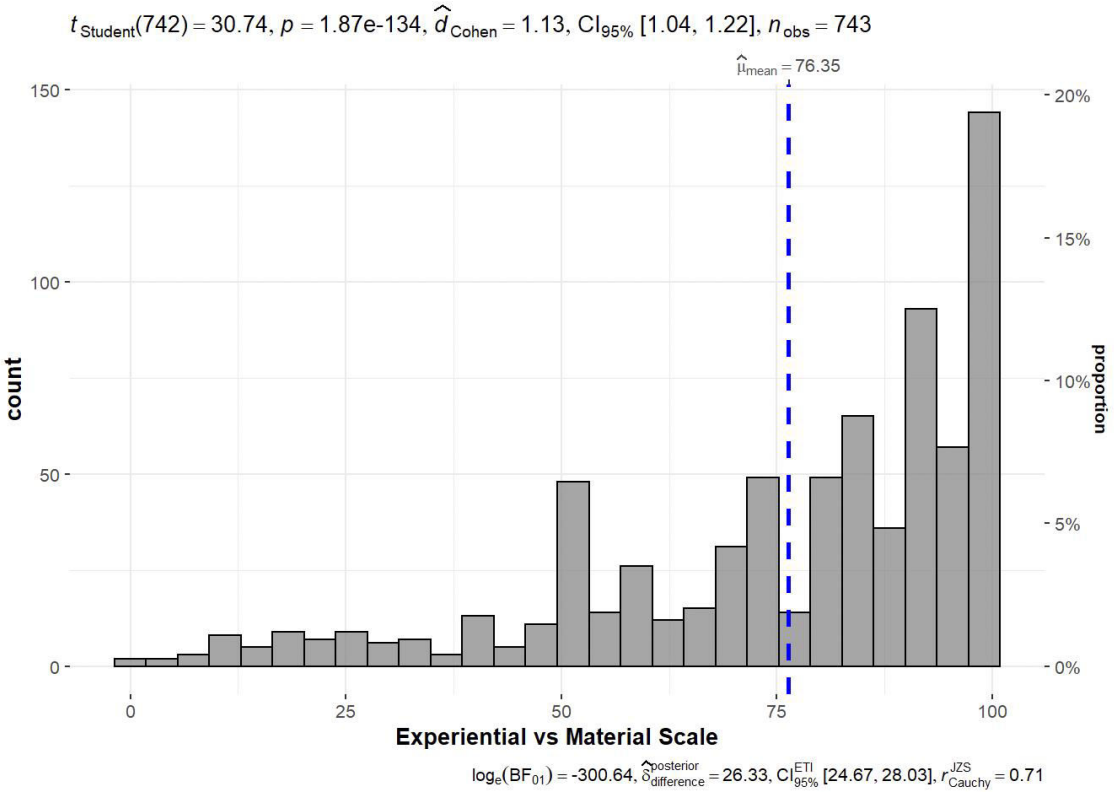
Study 3B: Purchase Type and Insight Into A Stranger's True Self



Note. Plot for experiential and material purchase knowledge providing greater insight into a stranger's true self. The scale is from 0 = *material purchase knowledge*, to 100 = *experiential purchase knowledge*; Higher values indicate experiential purchase knowledge would provide greater insight into a stranger's true self. The "ggstatsplot" package (Patil, 2018) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 4

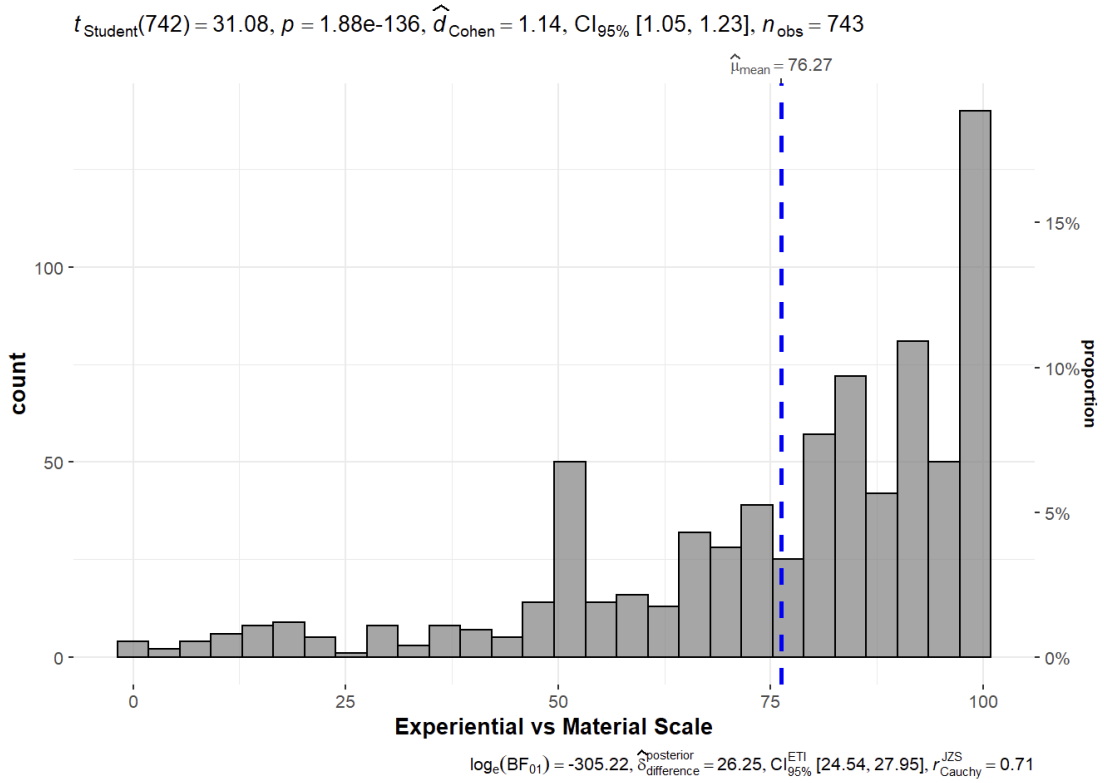
Study 3C: Purchase Type and Insight Into Meeting a New Person: Insight



Note. Plot for experiential and material purchase knowledge providing greater insight into a new person. The scale is from 0 = *material purchase knowledge*, to 100 = *experiential purchase knowledge*; Higher values indicate a greater preference for experiential purchase knowledge. The "ggstatsplot" package (Patil, 2018) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 5

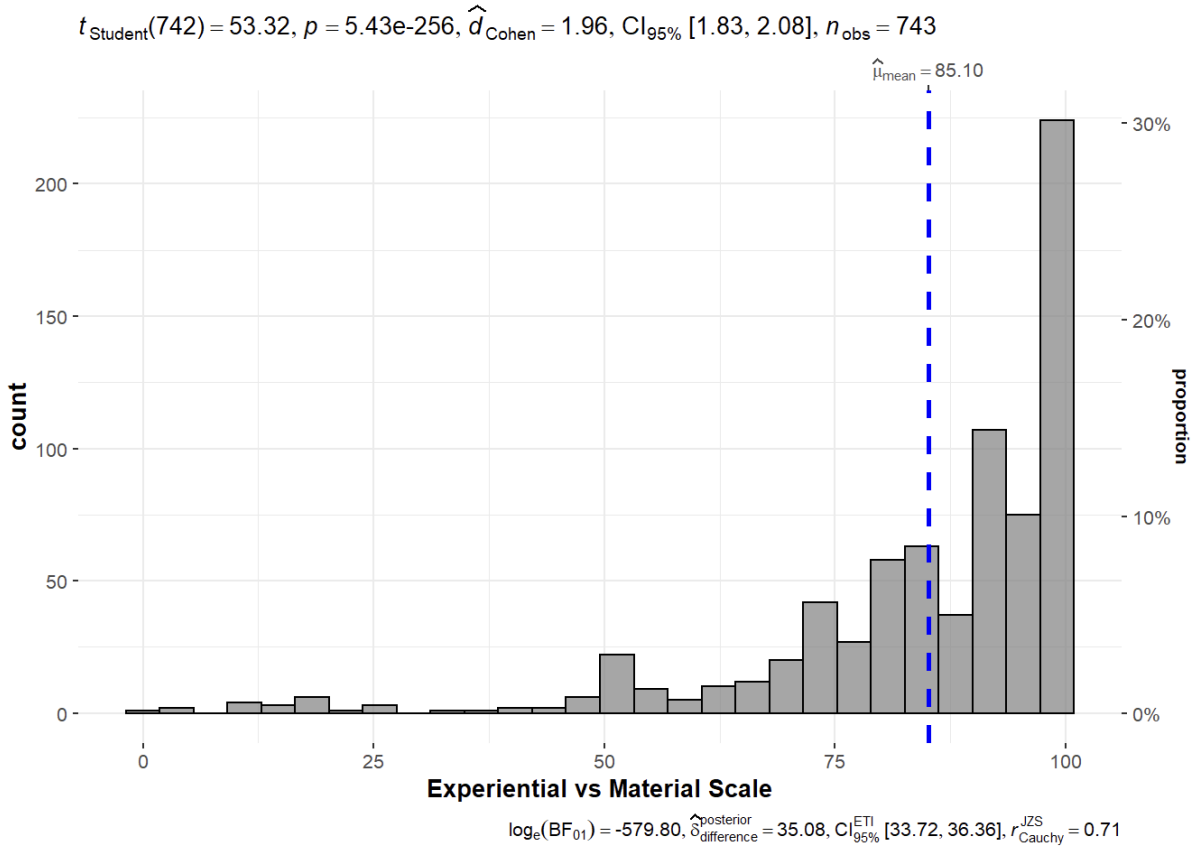
Study 3C: Purchase Type and Insight Into Meeting a New Person: Useful



Note. Plot for experiential and material purchase knowledge providing greater insight into a new person. The scale is from 0 = *material purchase knowledge*, to 100 = *experiential purchase knowledge*; Higher values indicate a greater preference for experiential purchase knowledge. The "ggstatsplot" package (Patil, 2018) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 6

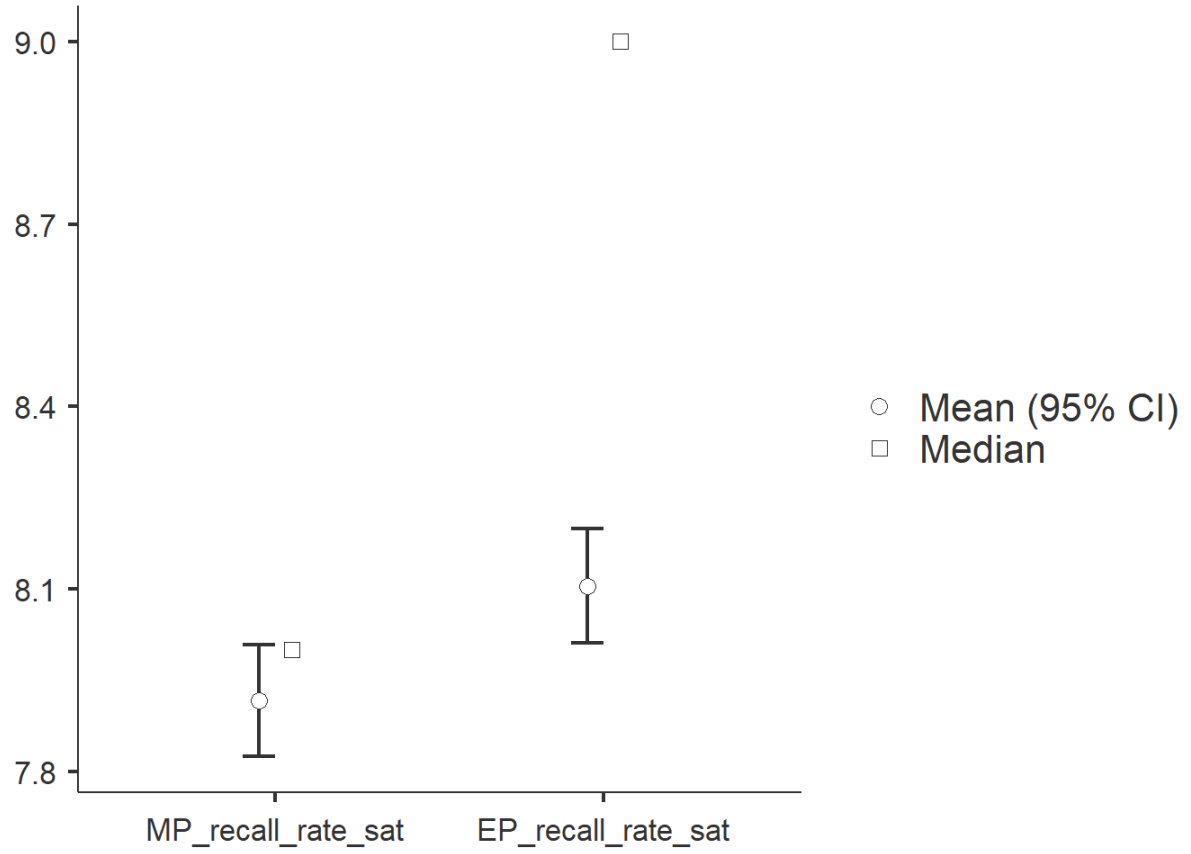
Study 3C: Purchase Type and Insight Into Meeting a New Person: Fun



Note. Plot for experiential and material purchase knowledge providing greater insight into a new person. The scale is from 0 = *material purchase knowledge*, to 100 = *experiential purchase knowledge*; Higher values indicate a greater preference for experiential purchase knowledge. The "ggstatsplot" package (Patil, 2018) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 7

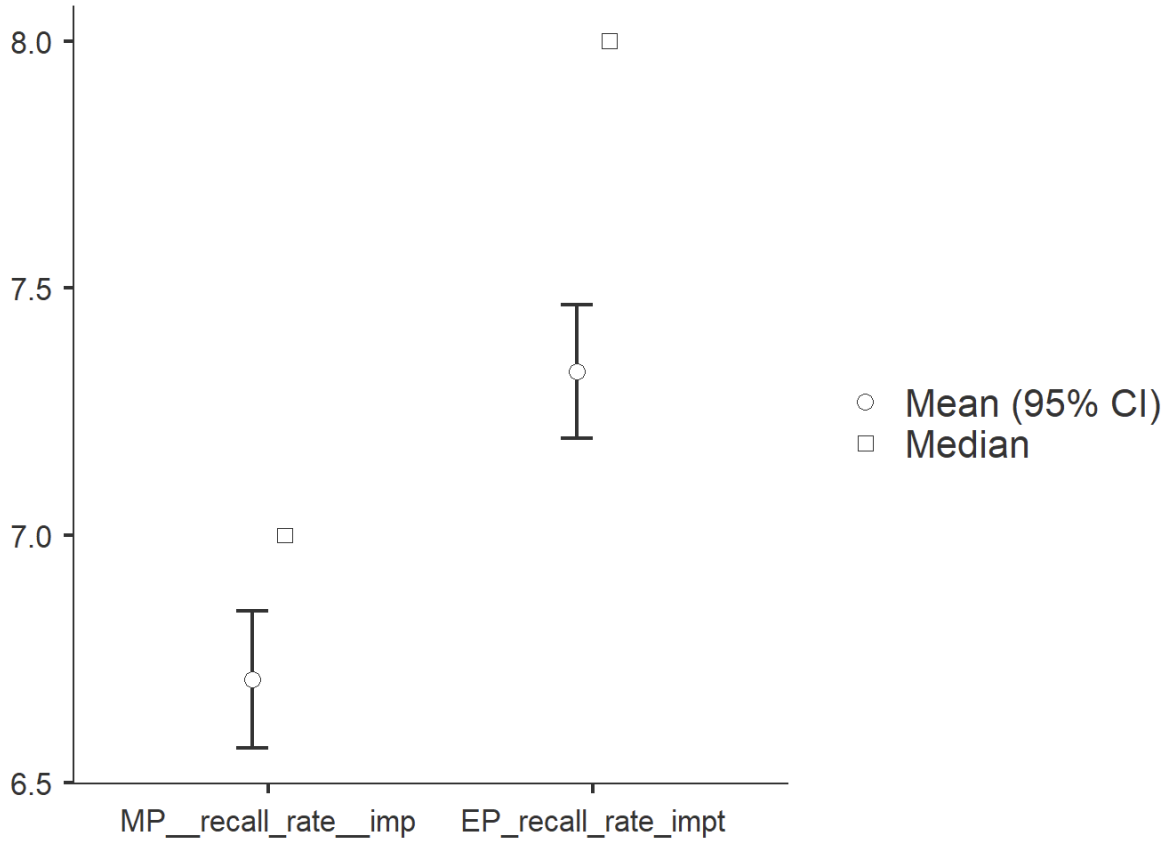
Study 5: Purchase Type and Satisfaction with the Purchases (Between-Subjects)



Note. Plot for experiential and material purchase types and satisfaction with the purchases. The scale is from 1 = *Not at all satisfied*, 5 = *Somewhat satisfied*, to 9 = *Extremely satisfied*; Higher values indicate greater satisfaction with the purchase.
The "ggstatsplot" package (Patil, 2018) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 8

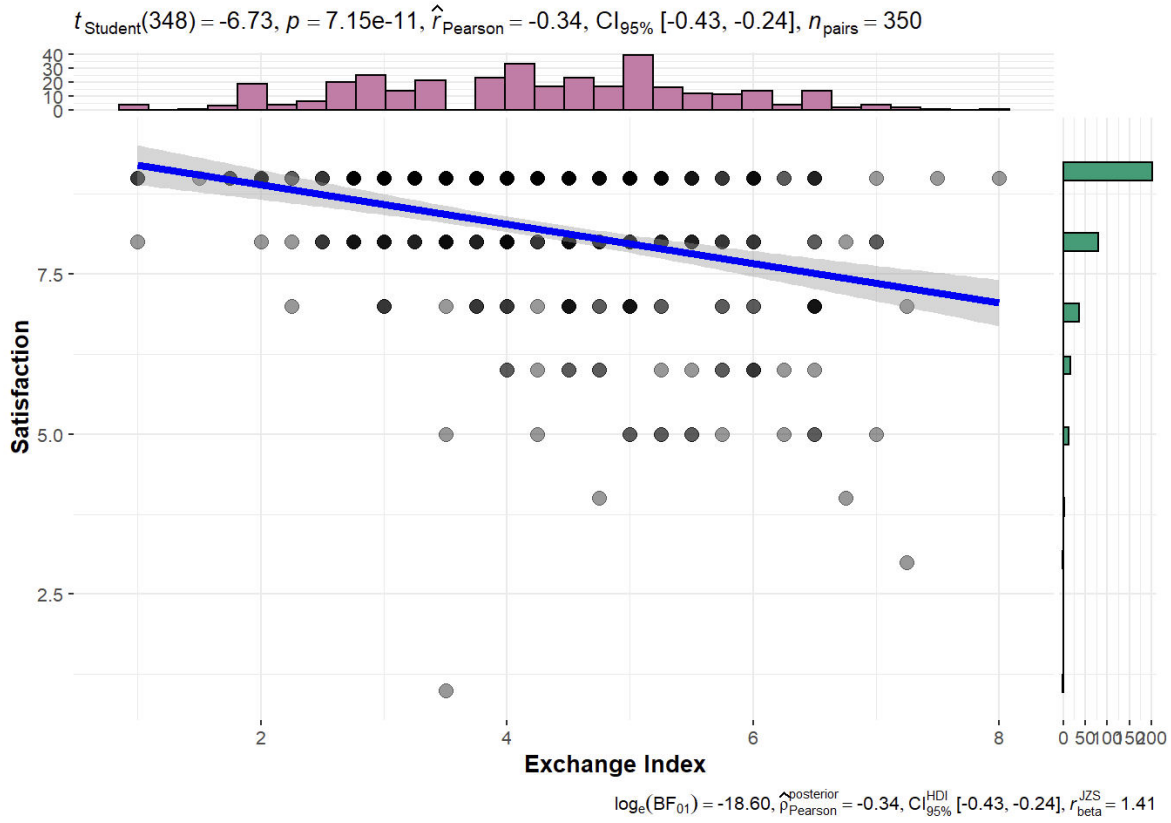
Study 5: Purchase Type and Importance of the Purchases (Between-Subjects)



Note. Plot for experiential and material purchase types and satisfaction with the purchases. The scale is from 1 = *Not at all important*, 5 = *Somewhat important*, to 9 = *Extremely important*; Higher values indicate greater importance of the purchase.
The "ggstatsplot" package (Patil, 2018) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 9

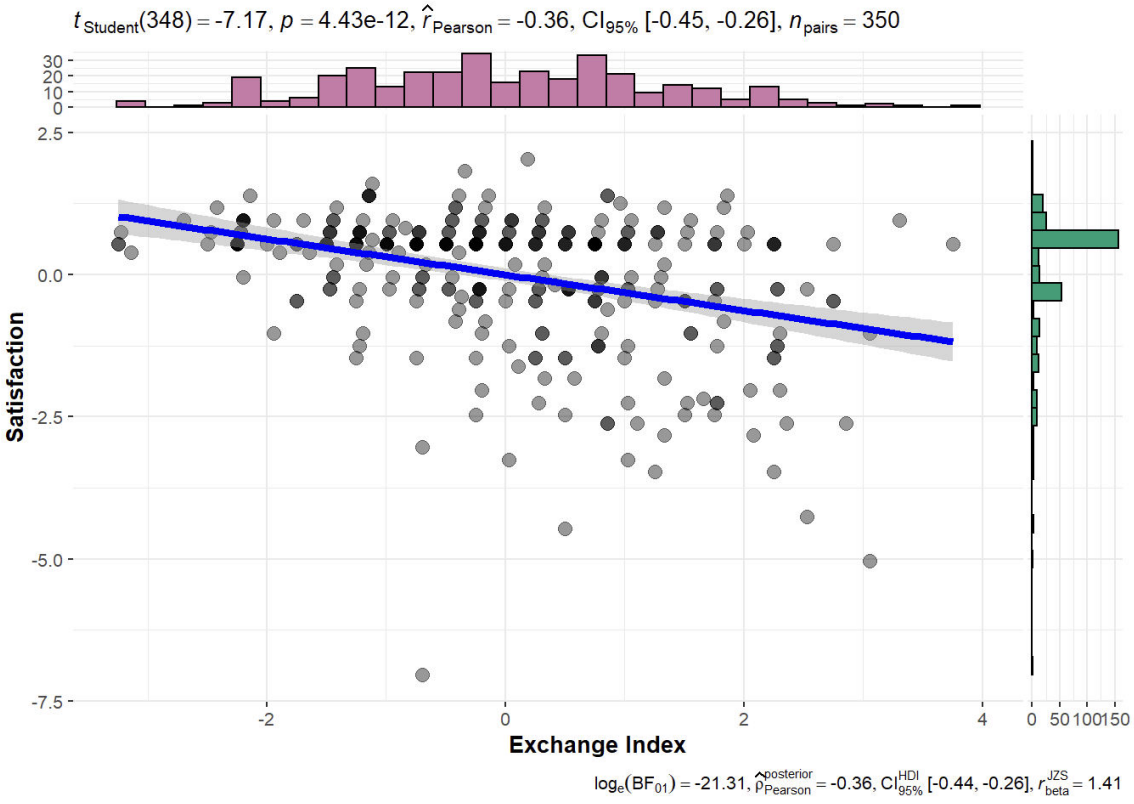
Study 5: Correlation of Experiential Purchase Exchange Index and Satisfaction (Between-Subjects)



Note. Scatter plot for correlation of exchange index of experiential purchase memories and satisfaction of experiential purchase. The scale is from 1 = *not willing to exchange / not at all satisfied*, to 9 = *very willing to exchange / very satisfied*; Higher values indicate a greater willingness for exchange of memories / greater satisfaction of the purchase.
Pearson's *r* correlation test revealed that, across 350 participants, a measure of willingness of memory exchange was negatively correlated with satisfaction, and this effect was statistically significant. The effect size (r = -0.34) is medium as per Cohen's (1988) conventions.
The "ggstatsplot" package (Patil, 2018) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 10

Study 5: Partial Correlation of Experiential Purchase Exchange Index and Satisfaction (Between-Subjects)

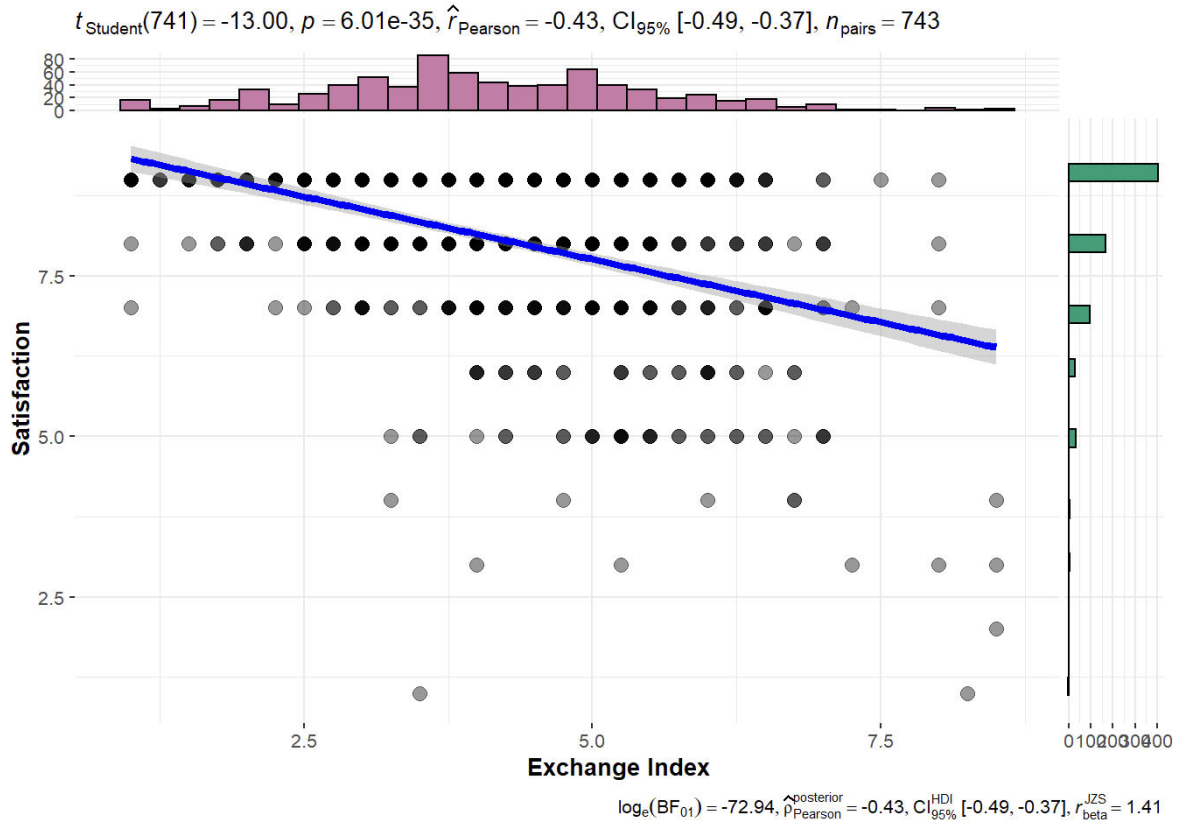


Note. Pearson's *r* partial correlation test revealed that, across 350 participants, a measure of willingness of memory exchange was negatively correlated with satisfaction, when satisfaction of material purchase was controlled for. This effect was statistically significant (r = -0.36), and the effect size is medium as per Cohen's (1988) conventions.
The "ggstatsplot" package (Patil, 2018) in RStudio (RStudio Team, 2020) was used to create the plot.

In the within-subject analysis, our result demonstrated a similar result that the exchange index of experiential purchase was negatively correlated with satisfaction of experiential purchases in both the Pearson's *r* correlation analysis, $r(741) = -0.43$, $p < .001$, 95% CI [-0.49, -0.37], and in the Pearson's *r* partial correlation analysis when the satisfaction of material purchases was controlled, $r(741) = -0.44$, $p < .001$, 95% CI [-0.50, -0.38].

Figure 11

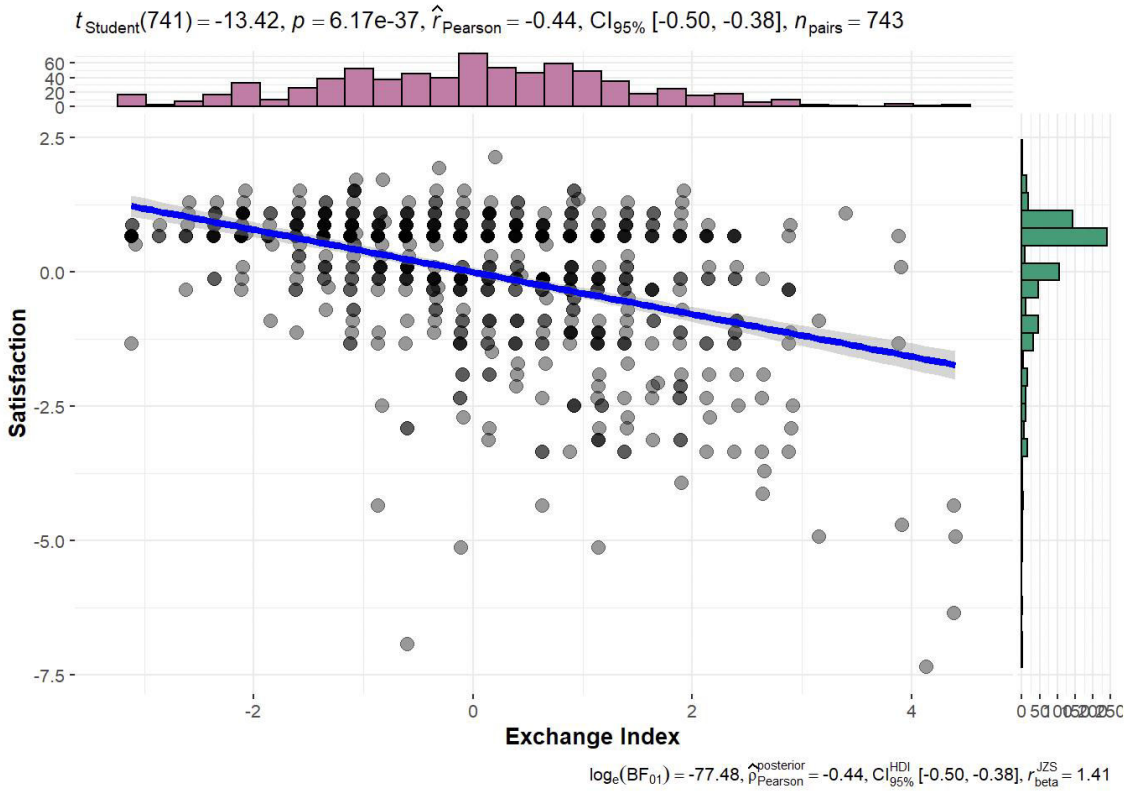
Study 5: Correlation of Experiential Purchase Exchange Index and Satisfaction (Within-Subjects)



Note. Scatter plot for correlation of exchange index of experiential purchase memories and satisfaction of experiential purchase. The scale is from 1 = *not willing to exchange / not at all satisfied*, to 9 = *very willing to exchange / very satisfied*; Higher values indicate a greater willingness for exchange of memories / greater satisfaction of the purchase.
Pearson's *r* correlation test revealed that, across 743 participants, a measure of willingness of memory exchange was negatively correlated with satisfaction, and this effect was statistically significant. The effect size (r = -0.43) is medium as per Cohen's (1988) conventions.
The "ggstatsplot" package (Patil, 2018) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 12

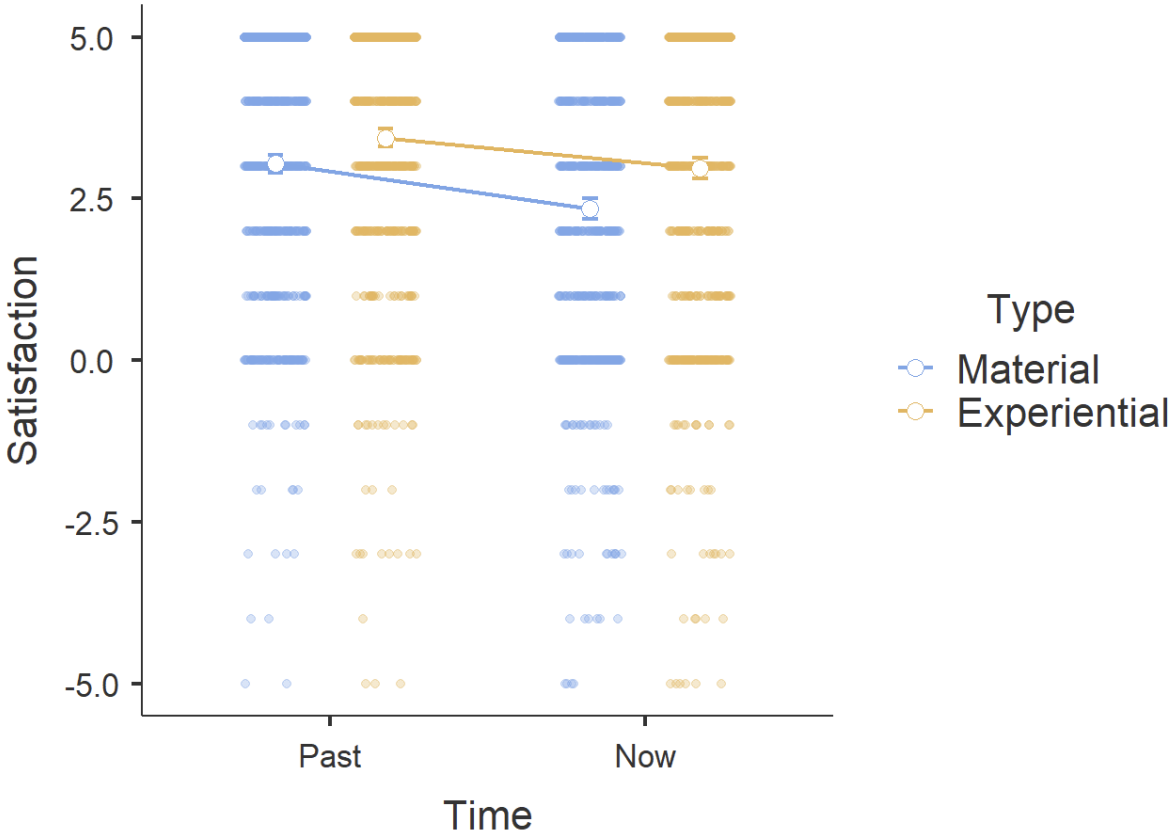
Study 5: Partial Correlation of Experiential Purchase Exchange Index and Satisfaction (Within-Subjects)



Note. Pearson's *r* partial correlation test revealed that, across 350 participants, a measure of willingness of memory exchange was negatively correlated with satisfaction, when satisfaction of material purchase was controlled for. This effect was statistically significant (r = -0.44), and the effect size is medium as per Cohen's (1988) conventions.
The "ggstatsplot" package (Patil, 2018) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 13

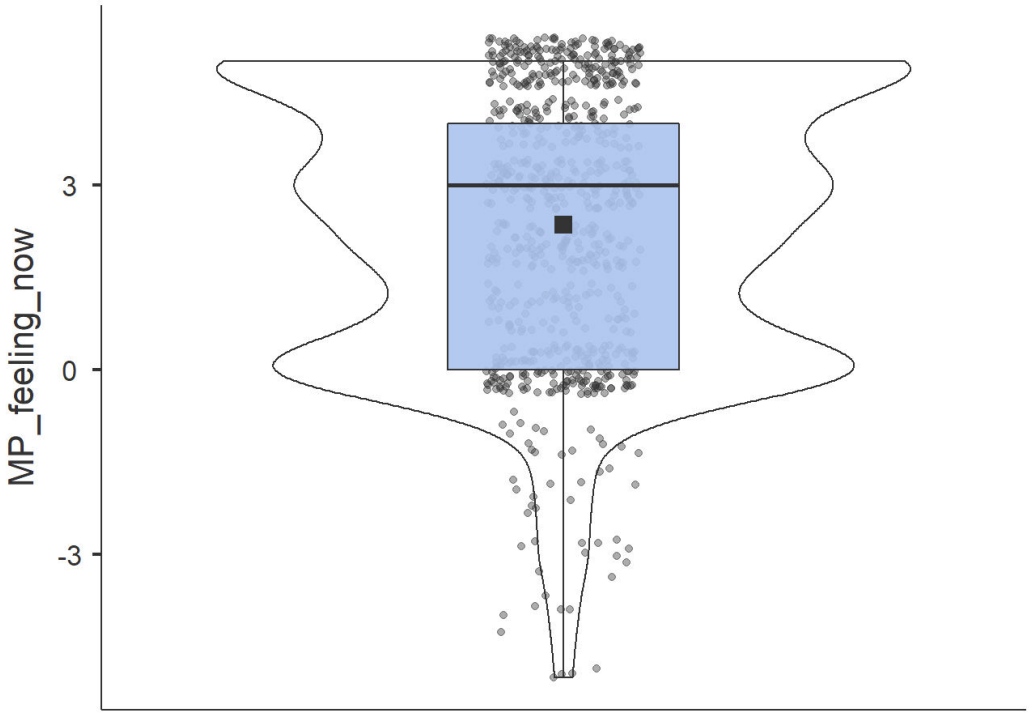
Extension: Repeated Measures Two-Way ANOVA



Note. Plot for interaction effect between time and purchase type. The scale is from -5 = *Very negative*, 0 = *Neutral*, to 5 = *Very positive*; Higher values indicate more positive perceptions.
The "jmv" package (Selker, 2022) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 14

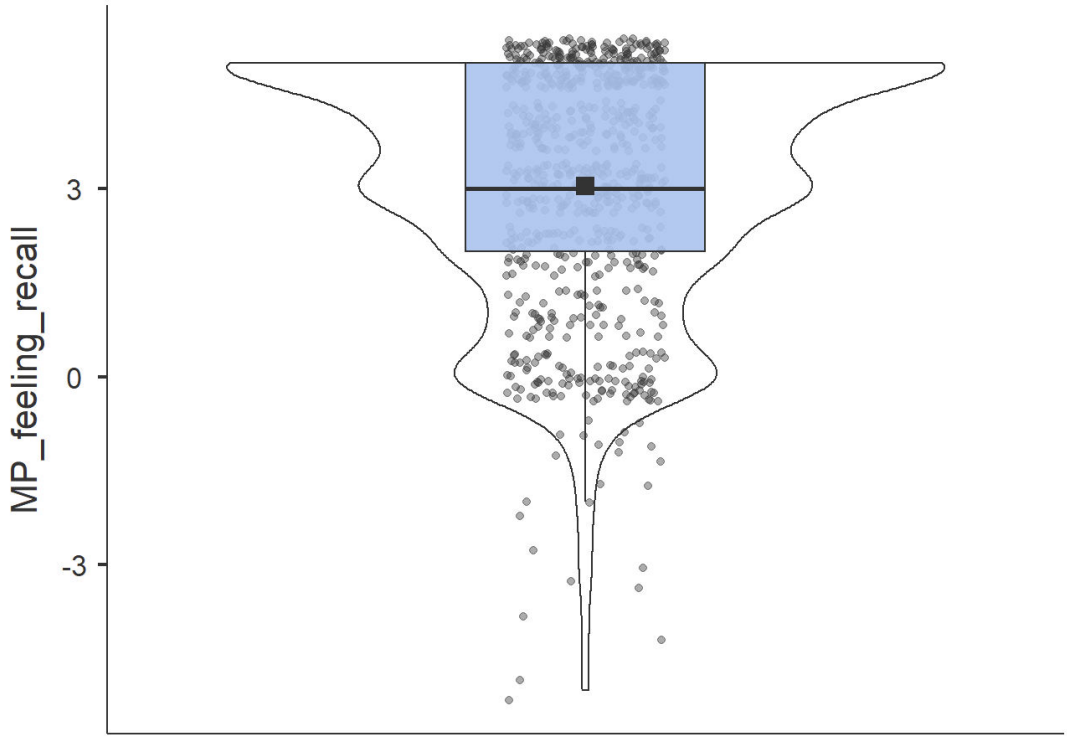
Extension: Repeated Measures Two-Way ANOVA – Current Feeling of Material Purchases



Note. Plot for the current feeling of material purchases. The scale is from -5 = *Very negative*, 0 = *Neutral*, to 5 = *Very positive*; Higher values indicate more positive perceptions.
The "jmv" package (Selker, 2022) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 15

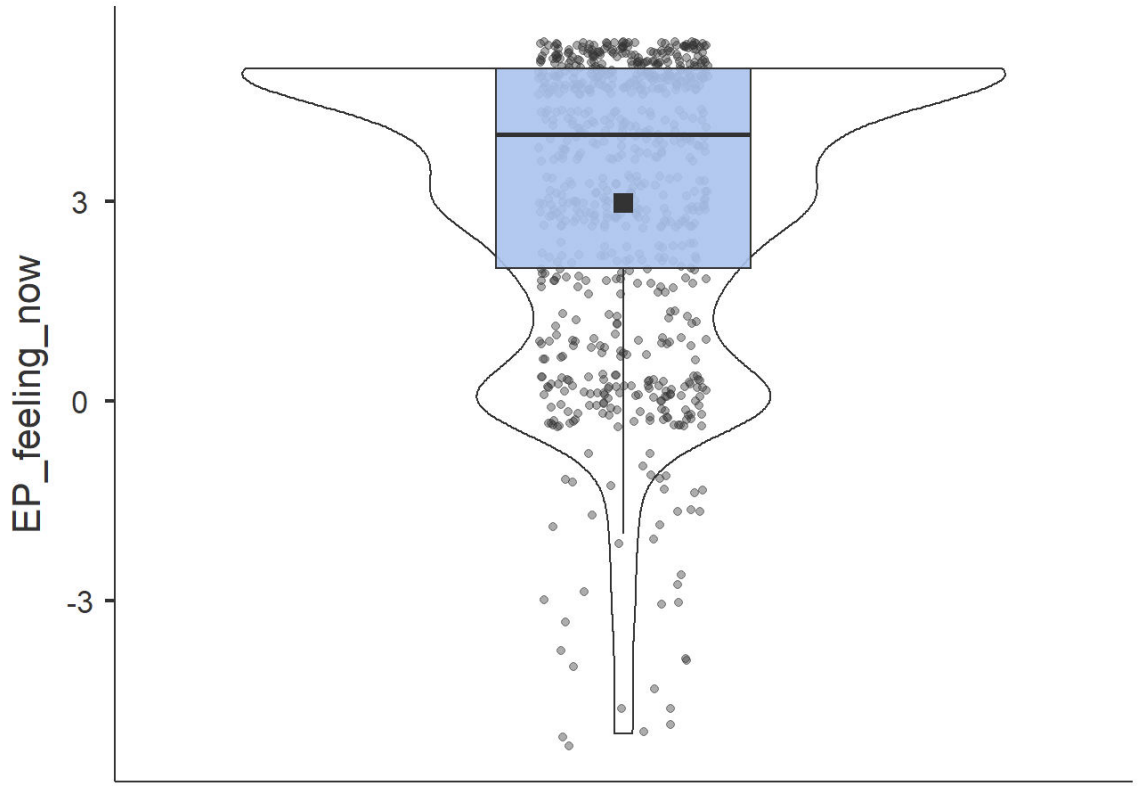
Extension: Repeated Measures Two-Way ANOVA – Past Feeling of Material Purchases



Note. Plot for past feeling of material purchases. The scale is from -5 = *Very negative*, 0 = *Neutral*, to 5 = *Very positive*; Higher values indicate more positive perceptions.
The "jmv" package (Selker, 2022) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 16

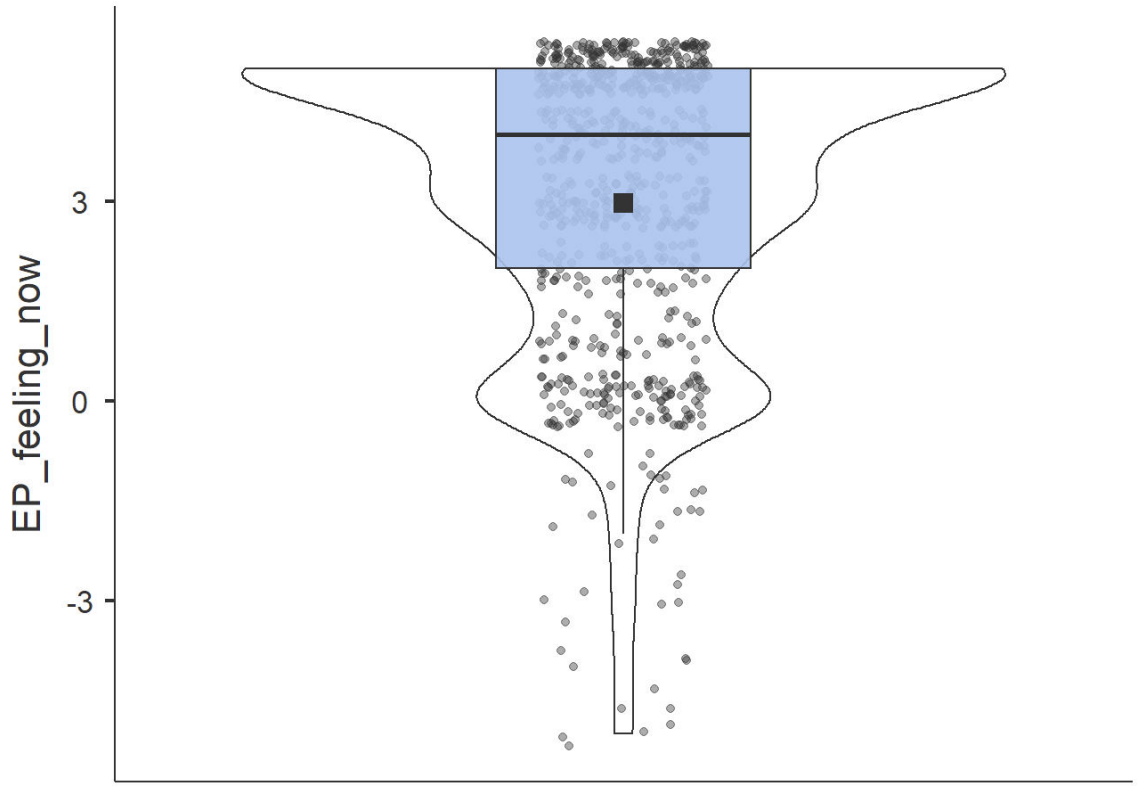
Extension: Repeated Measures Two-Way ANOVA – Current Feeling of Experiential Purchases



Note. Plot for the current feeling of experiential purchases. The scale is from -5 = *Very negative*, 0 = *Neutral*, to 5 = *Very positive*; Higher values indicate more positive perceptions.
The "jmv" package (Selker, 2022) in RStudio (RStudio Team, 2020) was used to create the plot.

Figure 17

Extension: Repeated Measures Two-Way ANOVA – Past Feeling of Experiential Purchases



Note. Plot for past feeling of experiential purchases. The scale is from -5 = *Very negative*, 0 = *Neutral*, to 5 = *Very positive*; Higher values indicate more positive perceptions.
The "jmv" package (Selker, 2022) in RStudio (RStudio Team, 2020) was used to create the plot.

Additional information about the study

1. Setting: The study was conducted on an online survey using Qualtrics.
2. Duration of Study Sessions: It was estimated that participants would take 4 to 8 minutes to complete the survey. They were given a maximum of 30 minutes for completion.
3. Time of Day: No allocated time given to participants.
4. Data collection dates: Data collection began on 16th June 2021 at HKT 00:20 and ended on 17th June 2021 at HKT 03:34.
5. Participant Recruitment: Participants were recruited on Amazon Mechanical Turk.

Data collection procedures:

This study was conducted on Amazon Mechanical Turk with American participants. We imposed the following settings in recruiting our participants:

1. Participants were paid USD 1 as a fixed participation reward. This amount was determined by multiplying the expected completion time (4 to 8 minutes) with the minimal federal wage in the United States (i.e., $0.125 per minute).
2. The expected completion time was set at 8 minutes in advance.
3. The most time we allowed each worker to complete the study was 30 minutes.
4. We limited all workers' HIT Approval Rate to be between 95% and 100%.
5. We limited each worker's number of HITs approved to be between 5,000 and 100,000.
6. We blocked Suspicious Geocode Locations and Universal Exclude List Workers.
7. We blocked duplicate IP addresses and duplicate geolocation.
8. We enabled HyperBatch so that all eligible workers were able to participate in our HIT immediately after the survey was launched.
9. We restricted workers' location to be in the United States.

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