



Damned if they do, damned if they don't: Material buyers are not happier from material or experiential consumption



Jia Wei Zhang^{a,b,*}, Ryan T. Howell^b, Peter A. Caprariello^c, Darwin A. Guevarra^d

^a Department of Psychology, University of California, Berkeley, United States

^b Department of Psychology, San Francisco State University, United States

^c College of Business, Stony Brook University, United States

^d Department of Psychology, University of Michigan, United States

ARTICLE INFO

Article history:

Available online 29 March 2014

Keywords:

Experiential purchase

Materialism

Happiness

Relatedness satisfaction

Expression of true self

Experiential buying tendency

ABSTRACT

Numerous studies have demonstrated that experiential purchases lead to more happiness than material purchases. However, prior research suggests that some characteristics of the purchase and person may moderate this experiential advantage. Our goal was to determine if the happiness gained from experiential purchases varies for individuals with different buying tendencies. The results of three studies ($N = 675$) demonstrated that material buyers, unlike experiential buyers, report equal levels of happiness from experiential and material purchases. Two mediated moderation models showed this is because material buyers report the same level of identity expression from their experiential and material purchases. The discussion focuses on why material buyers' consumption appears inconsistent with predictions from various personality theories (e.g., self-concordance, authenticity, and overall congruence).

© 2014 Elsevier Inc. All rights reserved.

1. Introduction

Happiness facilitates many positive outcomes (Frederickson, 2001; Lyubomirsky, Sheldon, & Schkade, 2005), and it is widely pursued (Myers, 2000). A common strategy believed to bring happiness is the acquisition of material possessions (Kasser, Cohn, Kanner, & Ryan, 2007). However, materialistic pursuits are associated with lower life satisfaction (Richins & Dawson, 1992), reduced happiness (Belk, 1985), decreased psychological need satisfaction (Kashdan & Breen, 2007), and increased levels of depression and anxiety (Kasser & Ryan, 1993). In light of these findings, philosophers and scientists have recommended experiential consumption, "spending money with the primary intention of acquiring a life experience" (Van Boven & Gilovich, 2003, p. 1194), as an alternative consumer strategy to increase happiness.

1.1. The experience recommendation

The experience recommendation (i.e., if you want to be happier, buy life experiences instead of material items; see Nicolao, Irwin, & Goodman, 2009), can be traced back to philosophical adages. For example, Aristotle, in *The Politics*, wrote that leisure makes all

people happy (Aristotle, 1962). However, it was not until the seminal experiential consumption article by Van Boven and Gilovich (2003) that strong empirical support for the experience recommendation was demonstrated. They asked students and adults which made them happier—life experiences or material items (see Study 1 and 2); both samples reported that life experiences made them happier than material possessions.

Since Van Boven and Gilovich's (2003) article, a number of studies have adapted their spending recollection design and examined the hedonic differences between life experiences and material items. In short, these studies have produced remarkably consistent results—life experiences contribute more to happiness than material items (see Caprariello & Reis, 2013; Carter & Gilovich, 2010, 2012; Howell & Hill, 2009; Millar & Thomas, 2009; Nicolao et al., 2009). Nevertheless, two open questions remain: why do life experiences lead to more happiness and do personality characteristics moderate this effect?

1.2. Why do life experiences lead to more happiness?

A number of studies have used variations of the spending recollection design to examine the mechanisms of the experiential advantage. Of all potential mediators, two have received the most attention: the enhanced social value of experiences and the alignment of experiences with one's identity (Caprariello & Reis, 2013; Carter & Gilovich, 2012).

* Corresponding author at: University of California, Berkeley, 4115 Tolman Hall, Berkeley, CA 94720, United States.

E-mail address: jwzhang23@gmail.com (J.W. Zhang).

In terms of enhanced social value, life experiences increase happiness through satisfying the psychological need of relatedness (Howell & Hill, 2009; Van Boven & Gilovich, 2003). For example, Howell and Hill (2009) found that relatedness satisfaction (e.g., “I made new friends or strengthened existing friendships because of this purchase”) mediated the relationship between experiential purchases, compared to material purchases, and happiness. Moreover, life experiences, compared to material items, are more likely to be shared with others (Caprariello & Reis, 2013), people are more likely to use memories of experiential purchases, rather than memories of material items, when telling a life story (Carter & Gilovich, 2012), and experiential purchases promote higher quality social interactions through the facilitation of story-telling (Kumar, Mann, & Gilovich, 2014). Finally, people find conversations about material items to be less enjoyable than conversations about life experiences (Van Boven, Campbell, & Gilovich, 2010). These findings suggest that the facilitation of higher quality interpersonal connections helps explain why experiential purchases, compared to material purchases, lead to greater happiness.

Another mechanism that has received much attention is the closer alignment of life experiences to one's identity. Prior research has demonstrated that life experiences better reflect a person's true identity, whereas material purchases are often motivated by extrinsic goals (e.g., to improve one's self-image; see Ferraro, Escalas, & Bettman, 2011; Van Boven & Gilovich, 2003). For example, Carter and Gilovich (2012) demonstrated that people were more likely to mention their experiential purchases, rather than material purchases, when they were instructed to tell their life story. A follow up study showed that people cling more closely to the memories of their experiences than material purchases. Importantly, an unwillingness to exchange memories mediated the relationship between experiential purchases, compared to material purchases, and satisfaction. Also, Carter and Gilovich (2010) demonstrated that buying life experiences leads to more happiness because people are focused on the inherent pleasure derived from the experience itself, whereas seeking happiness through material consumption leads people to focus more on extrinsic factors (e.g., better options, lower prices, comparing to the purchases of other people). These results might explain why material consumption does not improve happiness in life—the pursuit of extrinsic goals are a robust predictor of decreased well-being (Niemi, Ryan, & Deci, 2009; Ryan & Deci, 2000).

1.3. Is the experiential recommendation universal?

On the basis of the consistent findings that life experiences, relative to material items, lead to greater happiness, researchers have generally advocated that people should consume more life experiences than material items in order to increase their well-being (Dunn, Gilbert, & Wilson, 2011). However, prior research has suggested that some characteristics of the purchase and person may moderate the degree to which life experiences result in more happiness than material possessions. These results indicated that the experiential recommendation may not lead to more happiness all the time.

1.3.1. Purchase moderators of the experience recommendation

Three lines of research have discovered characteristics of the purchase that moderate the hedonic benefits of life experiences. First, Nicolao et al. (2009) showed that the valence of the purchase matters. For purchases that turn out well, life experiences made people happier than material items; however, there was no hedonic difference between purchases that turned out poorly. Second, Caprariello and Reis (2013) found that experiential purchases that involved others made people happier than solitary material and experiential purchases. Third, Bhattacharjee and

Mogilner (2014) found evidence that ordinary and extraordinary experiences have different effects on happiness, depending on age. For younger adults, extraordinary experiences made them happier than ordinary experiences, whereas both ordinary and extraordinary experiences led to happiness for older adults. Together, these studies demonstrate that certain characteristics of experiential purchases differentially impact the experiential advantage. Specifically, experiential purchases that turn out poorly, are solitary, and are ordinary (at least for younger adults) show minimal hedonic benefits.

1.3.2. Personality moderators of the experience recommendation

On the other hand, the possible personality moderators of the experiential advantage are less clear. For example, researchers have tested valuing materialistic pursuits (Richins, 2004) as a potential personality moderator; however, the results have been inconsistent. In one study, materialism moderated the extent to which experiential purchases increased happiness, such that the happiness derived from experiential and material purchases did not differ for materialists (Millar & Thomas, 2009). However, this purchase type by materialism interaction did not replicate in two follow up studies (Thomas, 2010). Carter and Gilovich (2012) also only found weak evidence that materialistic values attenuated the benefits of experiential purchases. On the other hand, Nicolao et al. (2009) found that materialism moderated the hedonic benefits of experiential purchases; however, this effect depended on the valence of the purchase. Specifically, for individuals lower in materialism, life experiences that turned out well led to greater happiness than material items that turned out well. However, those higher on materialism experienced the same level of happiness from material and experiential purchases that turned out well. Thus, the inconsistency of these results leads to the question of why materialistic values attenuate the benefits of experiential purchases some times while other times they do not. We suggest a few rival hypotheses.

First, it may be that, regardless of one's materialistic values, life experiences lead to more happiness than material items. This pattern, which is predicted by the experience recommendation, would support the previous non-significant purchase type by materialism interaction from Thomas (2010) as well as Carter and Gilovich (2012). Second, the experiential advantage may reliably differ when comparing people with different materialistic values. Specifically, it could be that highly materialistic individuals enjoy no hedonic benefit from their experiential purchases whereas less materialistic individuals do (as demonstrated by Millar and Thomas (2009) and Nicolao et al. (2009)). Finally, a third hypothesis, which is consistent with a number of personality theories (e.g., self-concordance, authenticity, and overall congruence; see Sherman, Nave, & Funder, 2012), is that materialistic individuals enjoy their material purchases more than their life experiences, whereas less materialistic individuals enjoy their experiential purchases more than material items. However, a complete interaction between the purchase type and materialistic values is not expected due to the robust experiential advantage demonstrated in previous studies (Caprariello & Reis, 2013; Carter & Gilovich, 2010, 2012; Howell & Hill, 2009; Millar & Thomas, 2009; Nicolao et al., 2009). In sum, each of these hypotheses differ in the degree to which materialistic individuals will enjoy the hedonic benefits of life experiences. Specifically, based on past findings and various theories, it is possible that materialistic individuals enjoy the same (supporting the experiential recommendation), no (supporting Millar and Thomas (2009) and Nicolao et al. (2009)), or a reversal of (supporting overall congruence) hedonic benefits from their life experiences when compared to less materialistic individuals.

1.4. Experiential buying tendency and materialism: conceptual and empirical differences

Nonetheless, there is another possible reason why materialistic values may sometimes attenuate the benefits of experiential purchases while other times they do not—materialistic values do not necessarily lead to material consumption. Prior research has found that the tendency to *value* obtaining material goods does not necessarily predict how much individuals actually *spend* on material possessions versus life experiences (Tatzel, 2003). As a result of the relative independence between materialistic values and actual consumer tendencies, and given the robust relationship between spending money on life experiences and happiness, it would stand to reason that it may be precisely *what* individuals typically buy that contributes to, or detracts from, their well-being (Howell & Howell, 2008). Consequently, it may be that materialistic values only attenuate the benefits of experiential purchases when they serve as a proxy for material consumption. It is for this reason that we suggest that the behavioral propensity to make experiential purchases, rather than material purchases, may be a more consistent moderator of the experiential advantage.

Recently, Howell, Pchelin, and Iyer (2012) developed the Experiential Buying Tendency Scale (EBTS) to measure the behavioral tendency to buy experiences or material possessions. The EBTS consists of four items in which lower scores represent a tendency to spend discretionary income on material purchases, whereas higher scores indicate a tendency to spend discretionary income on experiential purchases. During scale development, the authors demonstrated that the EBTS is internally consistent ($\alpha \geq .75$) and has a strong four-week test–retest correlation ($r = .76$). Behavioral evidence of validity was demonstrated when individuals who scored higher on experiential buying tendencies were more likely to choose an experiential gift card (e.g., to a restaurant, a movie theater of their choice, or to Ticketmaster.com) compared to a material gift card (e.g., to Amazon.com, Target.com, or to their favorite mall) as a reward for participation.

Although the EBTS was developed as an alternative to traditional scales of materialistic values, and it was intended to be conceptually distinct from materialistic values, as should be expected, there is some empirical overlap. For example, there is a negative correlation between the two scales ($r = -.43$; see Howell et al., 2012). Additionally, experiential buying tendencies are positively correlated with well-being (e.g., life satisfaction, Diener, Emmons, Larsen, & Griffin, 1985; psychological need satisfactions, Ryan & Deci, 2000), while there is a robust negative relationship between materialistic values and well-being (see Kasser, 2002, for a review). Nevertheless, evidence regarding their nomological networks suggests some independence and important differences.

For example, experiential buyers (i.e., individuals who score higher on the EBTS), compared to material buyers (i.e., individuals who score lower on the EBTS), tend to be drawn to highly rewarding stimuli, do not shy away from negative stimuli, exhibit characteristics associated with empathy, are prone to engagement with artistic, natural, and moral beauty, and tend to be low in attachment anxiety and avoidance (Howell et al., 2012). Furthermore, the EBTS is positively correlated with extraversion, openness, and agreeableness (Howell et al., 2012). Therefore, the personal and emotional profile of experiential buyers can be characterized by high in positive affectivity and sociability.

On the other hand, materialism, compared to experiential buying, is positively correlated with neuroticism, and negatively correlated with agreeableness and conscientiousness (Otero-López & Villardefrancos, 2013). Also, materialistic individuals (i.e., those with higher scores on the MVS), compared to individuals lower on materialism (i.e., those with lower scores on the MVS), tend to have poorer interpersonal interactions (Kasser, 2002) and are

viewed less favorably by others (Van Boven et al., 2010). Materialism is associated with a weak empathic response (Sheldon & Kasser, 1995), a Machiavellian personality profile (McHoskey, 1999), characterized by envy, possessiveness, and nongenerosity (Belk, 1985), as well as the pursuit of extrinsic, rather than intrinsic goals (Kasser, Ryan, Couchman, & Sheldon, 2004; Richins & Dawson, 1992). Finally, Howell et al. (2012) found that the correlation between the EBTS and social desirability was not significant, while the correlation between materialistic values and social desirability was significant. Thus, despite some overlap in the nomological networks between the two constructs, accumulating evidence suggests that the EBTS and materialism are both conceptually and empirically independent.

2. Overview of the research

To determine why sometimes materialism attenuates the benefits of experiential purchases while other times it does not and to examine the mechanisms of this interaction, we tested three hypotheses: (H1) that materialistic values moderate the experiential purchasing and happiness link, (H2) that experiential tendencies moderate the experiential purchasing and happiness link, and (H3) that relatedness satisfaction and identity expression are the mechanisms driving these interactions. We tested these hypotheses across three studies that varied in manipulation and design (i.e., between and within subjects) and ruled out alternative explanations (e.g., valence, price, time elapsed since purchase, and personality traits) to ascertain the unique moderating effect of materialistic values and experiential tendencies on the experiential advantage.

3. Study 1: Do buying tendencies or materialism moderate the experiential advantage?

Study 1 examined if materialistic values and/or experiential tendencies moderate the effect of purchase types (experiential vs. material) on happiness. Because the major goal of Study 1 was to detect a significant purchase type by materialism (or buying tendency) interaction, we conducted a power analysis to estimate an adequate sample size. First, we examined the effect sizes (Cohen's f^2) for the purchase type by materialism interactions reported in Millar and Thomas (2009) as well as Thomas (2010). For example, Millar and Thomas reported “the addition of the interaction terms produced a significant increase in prediction over the main effects model indicating an interaction between experience type and materialism, R^2 change = .14, $p < .01$ (see Table 1)” (p. 700). However, in Thomas (2010) the purchase type by materialism interactions were not significant (R^2 change = .004 and R^2 change = .014 in Study 1 and Study 2, respectively). Given these R^2 change values, we determined the Cohen's f^2 effect sizes for each study to be .162, .004, and .014. To estimate our anticipated Cohen's f^2 we averaged (unweighted) these three effect sizes. Finally, we calculated the minimum sample size required for the addition of an interaction term over the main effects model. Thus, our power analysis for a small estimated effect (anticipated Cohen's $f^2 = .06$), power level of .80, and alpha level of .05, demonstrated we would have adequate power to detect a significant interaction with approximately 132 participants.

We were able to recruit a sample of 111 participants (expected power = .73) to complete our 1-week study where on the first day participants completed a survey which measured their experiential buying tendencies (Howell et al., 2012) and materialistic values (Richins, 2004). One week later, participants were randomly assigned to recall and write about a past material or experiential purchase. Second, and more importantly, during the purchase recall

Table 1
Regression models predicting happiness from purchase (Study 1).

Model	Happiness from Purchase														
	Regression Analysis 1 $F(3,95) = 3.54, p = .018; R^2 = .10$					Regression Analysis 2 $F(3,95) = 4.38, p = .006; R^2 = .14$					Regression Analysis 3 $F(5,93) = 2.91, p = .017; R^2 = .16$				
	B	SE	β	CI Lower	CI Upper	B	SE	β	CI Lower	CI Upper	B	SE	β	CI Lower	CI Upper
Constant	4.67	.18		4.31	5.02	4.67	.16		4.35	5.00	4.69	.16		4.35	5.03
Purchase	.99	.36	.30**	.28	1.70	1.00	.33	.30**	.35	1.65	.94	.35	.28**	.25	1.62
MVS	-.10	.34	-.04	-.78	.57	-	-	-	-	-	-.41	.39	-.16	-1.18	.36
Purchase \times MVS	-.51	.69	-.10	-1.87	.84	-	-	-	-	-	.34	.78	.07	-1.21	1.89
EBTS	-	-	-	-	-	-.16	.16	-.10	-.48	.16	-.32	.21	-.19	-.74	.10
Purchase \times EBTS	-	-	-	-	-	.77	.32	.23*	.14	1.40	.90	.42	.27*	.05	1.74

Note. Conditions (Material = $-.50$, Experiential = $.50$). EBTS is experiential buying tendency scale; in each regression model the EBTS is mean centered. MVS is materialistic value scale; in each regression model the MVS is mean centered.

*** $p < .001$.

* $p < .05$.

** $p < .01$.

task, we asked participants in both conditions to consider a purchase that “brought [them] the most happiness, provided the best lasting memory, and led [them] to feel most connected to others.” This improved upon prior research by ensuring that the purchases being recalled were similar in quality across conditions.

3.1. Method

3.1.1. Participants

We recruited students from a large public university on the West Coast who participated in exchange for extra credit. Twelve individuals (11%) did not properly follow all instructions (e.g., reflected on the wrong purchase type) or had extreme scores (i.e., standardized scores above or below 2.58 on the cost of the purchase or when the purchase was made), and thus were removed from all analyses. The final sample consisted of 99 students ($M_{age} = 22.27, SD = 7.42$, range 18–54; 64.6% female, 36.4% Caucasian). However, none of the regression coefficients were significantly altered when these 12 individual were included or excluded.

3.1.2. Procedure

Participants accessed the study through an online server, provided implied consent, and completed the experiential buying tendency scale (Howell et al., 2012) as well as the materialistic values scale (Richins, 2004). One week later, participants were emailed a link in which they were either randomly assigned to write about a material purchase (defined as “a tangible, physical object that you obtain and keep in your possession”) or an experiential purchase (defined as “a life experience or event, the result of which was not the possession of a physical, tangible object, but rather a memory”). Afterward, they reported the degree to which the purchase has contributed to their overall life’s happiness and satisfaction, they consider their purchase as material or experiential (which served as our manipulation check), and reported the cost of the purchase and the time elapsed since the purchase.

3.1.3. Measures

3.1.3.1. Experiential buying tendency scale. The four-item EBTS (Howell et al., 2012) measures participants’ general tendency to make experiential or material purchases with their discretionary income. The response scale ranged from 1 (indicating a preference for material items) to 7 (indicating a preference for life experiences; $M = 4.65, SD = .99, \alpha = .53$).

3.1.3.2. Materialistic values scale. We also measured participants’ materialistic values with the nine-item materialistic values-short form (Richins, 2004). Participants indicated their agreement with

each statement using a 5-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree; $M = 2.81, SD = 0.64, \alpha = .82$).

3.1.3.3. Purchase happiness. To measure purchase happiness, we administered two items used by Pchelin, Howell, and Howell (2014). Participants reported the degree to which their purchase increased their happiness using the following items (“how much has this purchase contributed to your overall life’s happiness” and “how much do you think this purchase increased your overall life satisfaction”) from 1 (not at all) to 7 (very much; $M = 4.66, SD = 1.64, \alpha = .94$).

3.2. Results

3.2.1. Preliminary analyses

As expected, participants in the experiential condition rated their purchase as more experiential ($M = 3.71, SD = 0.93$) than participants in the material ($M = 2.54, SD = 0.98$) condition, $t(97) = 6.49, p < .001$. Importantly, the cost of the purchase did not differ between the material ($M = \$606.27, SD = \1597.85) and experiential ($M = \$494.82, SD = \1006.72) conditions, $t(97) = 0.42, p = .68$; nor did the time elapsed since purchase differ for the material ($M = 265.04$ days, $SD = 648.28$) and experiential ($M = 218.92$ days, $SD = 420.13$) conditions, $t(97) = 0.42, p = .67$. Also, the results did not differ with or without price and time elapsed entered into the regression analysis. Thus, they were omitted from the analyses. Finally, participants’ experiential buying tendency ($M_{Experiential} = 4.69, SD = 1.05$ and $M_{Material} = 4.60, SD = 0.92$) and materialism ($M_{Experiential} = 2.73, SD = 0.68$ and $M_{Material} = 2.90, SD = 0.58$) did not differ across conditions, $t(97) = 0.46, p = .65$ and $t(97) = -1.30, p = .20$, respectively. Finally, replicating past research (Howell et al., 2012), materialism and experiential buying tendency were inversely correlated ($r = -.62, p < .001$).

3.2.2. Testing moderators of the experiential advantage

We used the Hayes PROCESS macro to conduct the multiple regression analyses (Model 1 and 2; see Hayes, 2013) and estimated the bias-corrected coefficients from a series of 5000 bootstrap samples (see Preacher, Rucker, & Hayes, 2007). To test our interaction hypotheses, we contrast-coded the purchase conditions ($-.50$ for material purchase; $.50$ for experiential purchase) and mean centered the experiential buying and materialistic values scales. We formed two interaction terms by multiplying the condition codes with the mean centered variables. We then analyzed three regression models: (a) in analysis 1 (to test hypothesis 1), we entered the purchase condition code, mean centered materialism, and the purchase type by materialism interaction term; (b) in

analysis 2 (to test hypothesis 2), we entered the purchase condition code, mean centered experiential buying tendencies, and the purchase type by buying tendencies interaction term. In analysis 3, we entered the purchase condition code, the two mean centered trait variables, and the two interaction terms (see Table 1).

As shown in Table 1, the results corroborated and extended previous research. First, in all three models, participants derived more happiness from their experiential purchases than from their material purchases (see analysis 3; $\beta = .28$, $t = 2.72$, $p = .007$). Second, in the analysis testing our first hypothesis, materialism did not moderate the effect of purchase types on happiness (see analysis 1; $\beta = -.10$, $t = .75$, $p = .45$). Next, in the analysis testing the second hypothesis that experiential buying tendencies moderate the effect of purchase types on happiness, we found support for this hypothesis (see analysis 2; $\beta = .23$, $t = 2.44$, $p = .02$). Finally, when we examined the two interaction terms simultaneously in a third regression analysis, the results remained the same (see analysis 3). That is, only the purchase type by buying tendencies interaction significantly predicted purchase happiness.

We probed the purchase type by buying tendency interaction using the Hayes PROCESS macro. Inspection of the simple effects revealed that for experiential buyers (scores 1 SD above the mean on the EBTS), experiential purchases made people happier than material purchases ($B = 1.85$, $SE = .54$, 95% CI = [.76, 2.94], $t = 3.37$, $p = .001$). However, material buyers (scores 1 SD below the mean on the EBTS) showed no difference in happiness across purchase conditions ($B = .08$, $SE = .54$, 95% CI = [−.99, 1.15], $t = .15$, $p = .88$). Also, the Johnson–Neyman technique was applied to these data in order to identify the region of significance. For participants with an experiential buying tendency score at or lower than 4.18 (32.32% of the participants), or .47 points below the mean, there was no difference in the happiness they derived from life experiences and material items (see Fig. 1).

3.3. Brief discussion

Overall, the results demonstrate that the benefits of experiential purchases may depend on characteristics of the person. Specifically, experiential buyers enjoyed more happiness from consuming life experiences, compared to material items, whereas material buyers reported the same level of happiness from both life

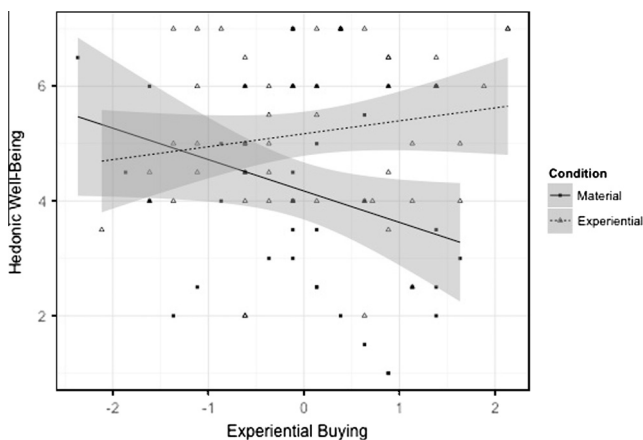


Fig. 1. The line graph depicts the relation between purchase happiness and one's buying tendency for both purchase conditions from Study 1. The shaded gray area represents the 95% confidence interval. Experiential buyers enjoy a hedonic advantage when consuming life experiences; however, material buyers report equal level of purchase happiness from both life experiences and material items. Also, the Johnson–Neyman technique demonstrated that participants with an experiential buying tendency score at or lower than 4.18 (32.32% of the participants), or .47 points below the mean, there was no difference in the happiness they derived from life experiences and material items.

experiences and material items. Also, materialistic values did not interact with the purchase type to predict purchase happiness (see both analysis 1 and analysis 3 from Table 1), which stands in contrast with Millar and Thomas (2009) and is consistent with the null interactions from Thomas (2010) as well as Carter and Gilovich (2010). These findings provide preliminary evidence that individuals' buying tendencies, rather than their materialistic values, better explain who gains the most happiness from life experiences.

Although Study 1 showed a significant purchase type by buying tendency interaction, supporting our second hypothesis, the results from this study are limited in a few ways. First, past research has shown that the EBTS is internally consistent ($\alpha \geq .75$, Howell et al., 2012); however, the reliability of the EBTS in Study 1 was lower than what has been reported in past research. This may have contributed to our significant interaction term being lower than we anticipated (i.e., the Cohen's f^2 for the purchase type by buying tendency interaction coefficient was .052) which resulted in this Study 1 being slightly under powered (i.e., the observed power of our interaction term was .61). Also, prior research has demonstrated that the happiness differences between experiential and material purchases for materialistic individuals, relative to less materialistic individuals, depends on the valence of the purchase (i.e., the moderating effect of materialism was only significant when the purchase turned out well; see Nicolao et al., 2009). Therefore, purchase valence is a possible alternative explanation for our significant interaction—perhaps experiential buyers were motivated to report experiential purchases that turned out well, while material buyers were more likely to report experiential purchases that turned out poorly. Lastly, past research has shown that both experiential buying and materialism are associated with the Big Five personality traits (Howell et al., 2012; Otero-López & Villardefrancos, 2013). Thus, three major goals of Study 2 were to replicate the purchase type by buying tendency interaction with an internally consistent EBTS and rule out purchase valence as well as the Big Five personality traits as alternative explanations of our hypothesized interaction.

4. Study 2: Why do material buyers report less happiness from their experiential purchases?

In addition to the three methodological goals of Study 2 (see above), the most important goal for Study 2 was to determine if relatedness satisfaction (e.g., improving relationships through discretionary spending; see Caprariello & Reis, 2013; Howell & Hill, 2009) and/or identity expression (e.g., spending money in ways that truly express the self; see Carter & Gilovich, 2012) explained our purchase type by buying tendency interaction.

4.1. Method

4.1.1. Participants

We recruited adults from Amazon's Mechanical Turk to complete an online experiment for monetary compensation (\$.35). Because the design of Study 2 randomly assigned people to one of four spending recollection conditions (see Nicolao et al., 2009), and we controlled for characteristics of the purchase (e.g., valence) and of participants (e.g., Big Five personality traits), we based our anticipated Cohen's f^2 only on the effect sizes for the purchase type by materialism interactions reported by Nicolao et al. First, we examined the effect sizes (Cohen's f^2) for the purchase type by materialism interactions reported in Nicolao et al. (see Study 1 and Study 2). For example, they report "[a]lthough there was not a main effect of materialism on happiness with the purchase... this construct moderated the valence by purchase type interaction.

($F[1,181] = 6.06, p < .05$) ($p = .192$). From this F-ratio we estimated the R^2 change to be .032. However, in Study 2 the purchase type by materialism interaction was smaller ($F[1,192] = 3.57, p = .06$); thus, the R^2 change was estimated to be .018. Given these R^2 change values, we determined the Cohen's f^2 effect sizes for each study to be .033 and .018. To estimate our anticipated Cohen's f^2 we averaged (unweighted) these two effect sizes. Finally, we calculated the minimum sample size required for the addition of an interaction term over the main effects model when controlling for the characteristics of the purchase and person. Thus, our power analysis for a small estimated effect (anticipated Cohen's $f^2 = .025$), power level of .80, and alpha level of .05, demonstrated we would have adequate power to detect a significant interaction with approximately 319 participants.

We were able to recruit a sample of 371 participants (expected power = .86) to complete study. However, similar to Study 1, 43 (11%) individuals did not properly follow all instructions (i.e., reflected on the wrong purchase type), provided extreme scores (standardized scores above or below 2.58 on the cost and or recently the purchase), or did not complete all trait measures, and thus were removed from analyses. Thus, the final sample consisted of 328 adults ($M_{age} = 34.12, SD = 13.05$, range 18–73; 62.8% female, 73.2% Caucasian). However, none of the regression coefficients were significantly altered when these 43 individual were included or excluded.

4.1.2. Procedure

Participants in Study 2 accessed the study through an online server, provided implied consent, and were randomly assigned to write about a material purchase (defined as “a tangible object that you obtained and kept in your possession like clothing, jewelry, or an accessory”) or an experiential purchase (defined as “an intangible event that you lived through like a dining experience, a vacation, or a concert”) that, following the instructions from Nicolao et al. (2009), was either positively valenced (“it turned out well and you enjoyed the purchase”) or negatively valenced (“it did not turn out well and you did not enjoy the purchase”). Then, they evaluated how much the purchase contributed to their happiness as well as how much the purchase satisfied their need for relatedness and identity expression. Next, they reported the extent to which they considered their purchase to be material or experiential (which served as our manipulation check), the cost of the purchase, and the time elapsed since purchase. Finally, in randomized order, they completed the EBTS ($M = 4.32, SD = 1.43, \alpha = .80$), the materialistic values scale ($M = 2.99, SD = 0.81, \alpha = .87$), and a measure of the Big Five personality traits.

4.1.3. Measures

4.1.3.1. Purchase happiness. Because we were using the same condition instructions as Nicolao et al., 2009, we used the same happiness items they administered. That is, participants reported their purchase happiness on two items (“When you think about this purchase, how happy does it make you?” and “How much does this purchase contribute to your happiness in life?”) from 1 (not at all) to 7 (very much; $M = 4.26, SD = 1.81, \alpha = .86$).

4.1.3.2. Identity expression. To measure identity expression, we administered three items used by Pchelin and Howell (2014). Participants reported how much their purchase reflected their true identity on three items (e.g., “How much was this purchase a true expression of who you are?”) from 1 (not at all) to 7 (very much; $M = 4.03, SD = 1.73, \alpha = .89$).

4.1.3.3. Relatedness satisfaction. To measure relatedness satisfaction, we administered three items used by Pchelin and Howell (2014). Participants reported how much their purchase allowed

them to feel connected (e.g., “To what extent did this purchase help to make new friends or strengthen existing friendships?”) from 1 (not at all) to 7 (very much; $M = 3.53, SD = 1.80, \alpha = .86$).

4.1.3.4. Big five personality. In addition to administering the EBTS and MVS (just like Study 1), we assessed individual differences in Big Five personality traits using the Ten Item Personality Inventory (Gosling, Rentfrow, & Swann, 2003). Participants indicated how much they agreed with specific phrases that describe personality characteristics on a 5-point scale ranging from 1 (disagree strongly) to 7 (agree strongly). Some example items were: extraversion: “extraverted, enthusiastic” ($M = 3.89, SD = 1.50, \alpha = .65$); agreeableness: “sympathetic, warm” ($M = 5.09, SD = 1.22, \alpha = .36$); conscientiousness: “dependable, self-disciplined” ($M = 5.36, SD = 1.29, \alpha = .61$); neuroticism: “anxious, easily upset” ($M = 3.25, SD = 1.51, \alpha = .70$); and openness: “open to new experiences, complex” ($M = 5.06, SD = 1.25, \alpha = .53$).

4.2. Results

4.2.1. Preliminary analyses

As expected, participants in the experiential condition rated their purchase as more experiential ($M = 4.43, SD = 1.02$) than participants in the material ($M = 1.69, SD = 0.98$) condition, $t(327) = 24.72, p < .001$. However, the cost of the purchase differed between the material ($M = \$277.81, SD = \412.42) and experiential ($M = \$426.15, SD = \706.48) conditions, with participants reporting more expensive life experiences, $t(327) = 2.37, p = .02$. Also, the time elapsed since purchase for the material ($M = 38.70$ days, $SD = 75.20$) and experiential ($M = 81.30$ days, $SD = 111.79$) conditions significantly differed from each other, with material purchases being more recently purchased, $t(327) = 4.11, p < .001$. Finally, both price ($r = .25, p < .001$) and how recent the purchase was made ($r = .13, p = .02$) were positively correlated with purchase happiness; thus, we controlled for price and recency in all regression models. Importantly, participants' experiential buying tendency ($M_{Experiential} = 4.33, SD = 1.38$ and $M_{Material} = 4.32, SD = 1.48$) and materialism ($M_{Experiential} = 2.96, SD = 0.82$ and $M_{Material} = 3.01, SD = 0.82$) did not differ across conditions, $t(327) = 0.08, p = 0.94$ and $t(327) = -.65, p = 0.51$, respectively. This indicates that when the trait measures were administered (before [Study 1] or after [Study 2] the purchase recollection) did not impact trait scores. Also, replicating Study 1, materialism and experiential buying tendencies were inversely correlated ($r = -.25, p < .001$), though less strongly than in Study 1.

We also examined the relations between experiential buying and materialism with the Big Five personality traits. First, the bivariate correlations between the Big Five and experiential tendencies were, for the most part, weak. The only significant correlates of experiential tendencies were extraversion ($r = .12, p = .03$) and agreeableness ($r = .11, p = .05$). Also, the correlations between materialism and the Big Five tended to be stronger; those endorsing higher materialistic values reported being less agreeable ($r = -.29, p < .001$), conscientious ($r = -.15, p = .01$), open to experience ($r = -.14, p = .01$), and more neurotic ($r = .16, p = .01$). In sum, the correlations largely replicated past research for individual difference measures (Howell et al., 2012; Otero-López & Villardefrancos, 2013). In all the analyses below, we controlled for the Big Five personality traits.

4.2.2. Replicating the EBTS moderation of the experiential advantage

Similar to Study 1, we used the Hayes PROCESS macro to conduct multiple regression analyses and estimated the bias-corrected coefficients from a series of 5000 bootstrap samples. To test our interaction hypotheses, we contrast-coded the purchase conditions (−.50 for material purchase and .50 for experiential purchase) and

mean centered the experiential buying and materialistic values scales. We formed two interaction terms by multiplying the condition codes with the mean centered variables. We then conducted two regression analyses (using Model 1 from PROCESS). The first regression model tested hypothesis 1 by regressing purchase happiness onto the purchase condition code, mean centered materialism, and the purchase type by materialism interaction term while controlling for the valence condition, (contrast coded $-.50$ for negative valence and $.50$ for positive valence), the purchase cost and how recent the purchase was made (mean centered), and the Big Five personality traits (mean centered). The second regression model tested hypothesis 2 by regressing purchase happiness onto the purchase condition code, mean centered experiential buying tendencies, and the purchase type by buying tendency interaction term while controlling for the valence, cost, recency, and Big Five personality traits.

As shown in Table 2, even when controlling for the valence, cost, how recent the purchase was made, and Big Five personality traits, the results from Study 2 replicated the most important results from Study 1. First, participants reported more purchase happiness from their experiential purchases (see analysis 3; $\beta = .17$, $t = 3.45$, $p = .001$) and from purchases that turned out positively (see analysis 3; $\beta = .41$, $t = 8.11$, $p < .001$). Most importantly, replicating Study 1, the purchase type by buying tendency interaction was significant (see analysis 2; $\beta = .16$, $t = 3.12$, $p = .002$), whereas the interaction between the purchase type and materialism was not (see analysis 1; $\beta = -.06$, $t = 1.15$, $p = .25$). Finally, when the two interaction terms were entered simultaneously (see analysis 3), the results remained the same. In sum, replicating Study 1, these results support our second, but not our first, hypothesis.

We probed the purchase type by buying tendency interaction using the Hayes PROCESS macro. Inspection of the simple effects revealed that for experiential buyers (scores 1 SD above the mean on the EBTS), even after controlling for the valence, cost, how recent the purchase was made, and Big Five personality traits, experiential purchases made people happier than material purchases ($B = 1.24$, $SE = .26$, $95\% \text{ CI} = [.73, 1.75]$, $t = 4.78$, $p < .001$). However, material buyers (scores 1 SD below the mean on the EBTS) showed no difference in happiness across purchase conditions ($B = .07$, $SE = .26$, $95\% \text{ CI} = [-.43, .58]$, $t = .30$, $p = .77$). Also, the Johnson–Neyman technique was applied to these data in order to identify the region of significance. For participants with an experiential buying tendency

score at or lower than 3.73 (28.35% of the participants), or .59 points below the mean, there was no difference in the happiness they derived from life experiences and material items (see Fig. 2).

4.2.3. Explaining the EBTS moderation of the experiential advantage

Next, we examined whether relatedness satisfaction or identity expression explained why material, relative to experiential, buyers reported the same level of happiness with their material and experiential purchases. We used the Hayes PROCESS macro to test for mediated moderation (Model 8; see Hayes, 2013) and inferred support for either relatedness satisfaction or identity expression as the mediator of our purchase type by buying tendency interaction using the criteria outlined by Muller, Judd, and Yzerbyt (2005). In sum, all four criteria were met only for identity expression (see Table 3 for the multiple regression analyses testing mediated moderation).

First, as demonstrated in the previous analysis, the purchase type by buying tendency interaction was significant when predicting purchase happiness before either identity expression or relatedness satisfaction were entered into the model. Next, the purchase type by buying tendency interaction was significant when predicting identity expression (see Table 3 analysis 1; $\beta = .20$, $t = 3.45$, $p = .001$) but not when predicting relatedness satisfaction (see Table 3 analysis 2; $\beta = .09$, $t = 1.57$, $p = .12$). These results demonstrated that: (a) the effect of purchase type on identity expression is moderated by the EBTS and (b) the effect of purchase type on relatedness satisfaction is positive and significant regardless of buying type (i.e., it cannot explain the purchase type by buying tendency interaction). A simple slopes analysis demonstrated that for experiential buyers, life experiences provided more identity expression than material purchases ($B = 1.49$, $SE = .27$, $95\% \text{ CI} = [.97, 2.01]$, $t = 5.62$, $p < .001$). However, for material buyers, life experiences provided the same identity expression as material items ($B = .10$, $SE = .28$, $95\% \text{ CI} = [-.44, .64]$, $t = .36$, $p = .72$). Next, the results indicated that identity expression significantly predicted purchase happiness (see Table 3 analysis 1; $\beta = .46$, $t = 9.67$, $p < .001$). Finally, when we added identity expression to the prediction of purchase happiness, the main effect of purchase type (see Table 3 analysis 1; $\beta = .07$, $t = 1.69$, $p = .09$) as well as the purchase type by buying tendency interaction (see Table 3 analysis 1; $\beta = .07$, $t = 1.52$, $p = .13$) were reduced to non-significance. In this analysis, the 95% confidence interval around the index of

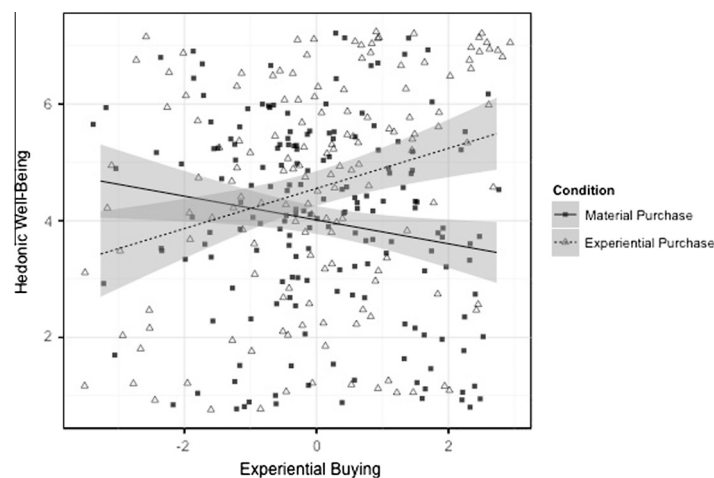


Fig. 2. The line graph depicts the relation between purchase happiness and one's buying tendency for both purchase conditions from Study 2 where the purchase valence, cost, and recency as well as the Big Five are held constant. The shaded gray area represents the 95% confidence interval. Again, replicating Study 1, experiential buyers enjoy a hedonic advantage when consuming life experiences; however, material buyers report equal level of purchase happiness from both life experiences and material items. Also, the Johnson–Neyman technique demonstrated that participants with an experiential buying tendency score at or lower than 3.73 (28.35% of the participants), or .59 points below the mean, there was no difference in the happiness they derived from life experiences and material items.

Table 2
Regression model predicting purchase happiness (Study 2).

Model	Happiness from Purchase														
	Regression Analysis 1 $F(11, 316) = 12.61, p < .001; R^2 = .28$					Regression Analysis 2 $F(11, 316) = 13.38, p < .001; R^2 = .30$					Regression Analysis 3 $F(13, 314) = 11.67, p < .001; R^2 = .30$				
	B	SE	β	CI Lower	CI Upper	B	SE	β	CI Lower	CI Upper	B	SE	β	CI Lower	CI Upper
Constant	4.21	.09		4.04	4.40	4.21	.09		4.04	4.40	4.22	.09		4.04	4.39
Purchase	.63	.18	.18***	.27	1.00	.63	.18	.18***	.28	.99	.63	.18	.17**	.27	.98
MVS	.10	.13	.04	-.15	.34	–	–	–	–	–	.12	.13	.06	-.13	.38
Purchase \times MVS	-.28	.25	-.06	-.76	.20	–	–	–	–	–	-.12	.25	-.03	-.61	.37
EBTS	–	–	–	–	–	.06	.07	.05	-.07	.19	.08	.07	.06	-.05	.21
Purchase \times EBTS	–	–	–	–	–	.40	.13	.16**	.15	.67	.39	.14	.15**	.12	.65
Purchase Valence	1.49	.18	.41***	1.13	1.86	1.44	.18	.40***	1.08	1.80	1.47	.18	.41***	1.12	1.83
Purchase Cost	.29	.09	.16**	.12	.46	.25	.09	.14**	.07	.42	.24	.09	.14**	.07	.42
Recent Purchase	-.23	.10	-.13*	-.43	-.03	-.24	.10	-.13*	-.43	-.04	-.24	.10	-.13*	-.43	-.04

Note. Conditions (Material = -.50, Experiential = .50). Valence (Negative = -.50, Positive = .50). EBTS is experiential buying tendency scale. MVS is materialistic value scale. In all analyses we control for the Big Five personality traits; however, none of the traits are significant any of the regression models.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

moderated mediation did not include zero, indicating a statistically significant overall effect ($B = .23, SE = .07, 95\% CI = [.10, .37]$). Also, we examined the support for identity expression as the mediator of the interaction when controlling for relatedness satisfaction and the results were unchanged. Finally, to test the robustness of this mediated moderation model, we examined a reverse causation model with purchase happiness as the mediator and identity expression as the outcome. However, happiness did not reduce the strength of the interaction between the purchase type by buying tendency interaction when predicting identity expression ($\beta = .11, t = 2.31, p = .02$).

In sum, these data suggest that life experiences lead to more purchase happiness because they increased identity expression, but only for experiential buyers. Specifically, the conditional indirect effect of experiential purchases on purchase happiness through identity expression was significant for experiential buyers ($B = .71, SE = .14, 95\% CI = [.46, 1.02], t = 4.93, p < .001$), but not for material buyers ($B = .05, SE = .13, 95\% CI = [-.20, .30], t = .37, p = .71$). Thus, it appears the reason material buyers do not enjoy an experiential advantage is that life experiences, compared to material items, do not lead to increased identity expression.

4.3. Brief discussion

Together, the current results support and extend the previous study in several ways. First, we replicated the hypothesized purchase type by buying tendency interaction on purchase happiness with an internally consistent EBTS. Importantly, we ruled out the alternative explanation that our interaction was the result of experiential buyers recalling more positive experiential purchases whereas material buyers were recalling more negative experiential purchases. Further, replicating Study 1, materialism did not interact with the purchase type in predicting purchase happiness. Thus, given this pattern of non-significant findings across the two studies, the evidence suggests that the experiential advantage is moderated by experiential buying tendencies, not by materialistic values. Finally, influenced by prior research (Carter & Gilovich, 2012), we found that for material buyers, experiential purchases lead to the same happiness as material purchases because their life experiences are not more expressive of their true selves.

5. Study 3: A within-subjects design to test the robustness of the model

The previous two studies showed that experiential purchases, compared to material purchases, led to similar levels of happiness

for material buyers and greater happiness for experiential buyers. Also, in Study 2 we found that this interaction was due to material buyers, compared to experiential buyers, experiencing less identity expression from their life experiences. Study 3 employed a within-subjects design to determine if material buyers report equal happiness, and equal identity expression, with their life experiences and material purchases when they reflect on both purchases. However, as described by Judd, Kenny, and McClelland (2001), while the procedures assessing moderation and mediation have been “reasonably well worked out” for between subject designs, there has been much less “formal work [to develop a] rationale” for within subjects moderation and mediation (p. 115). Thus, we applied the moderation procedures suggested by Judd et al. to examine the support for hypothesis 2 and tested for mediated moderation using Model 4 from the Hayes PROCESS macro (Hayes, 2013).

5.1. Method

5.1.1. Participants and procedures

Participants for Study 3 were adult volunteers who completed two specific studies from BeyondThePurchase.Org. Much like YourMorals.org (see Zhang, Howell, & Iyer, 2014; Zhang, Piff, Iyer, Koleva, & Keltner, 2014), the Beyond the Purchase website provides a more diverse alternative to traditional student samples and has similar characteristics as opt-in data that has been used for a number of recent empirical articles. Because we used participants from an opt-in platform in Study 3, we used any participant who completed both the EBTS and the spending recollection study. Because this within-subjects study design examined the relationship between the EBTS and the difference between the purchase happiness for a life experience and a material item, we estimated our anticipated moderating effect size from the observed moderating effect from Study 1 (i.e., our anticipated Cohen's $f^2 = .052$ for a moderating effect). Thus, our power analysis for a small estimated effect, power level of .80, and alpha level of .05, demonstrated we would have adequate power to detect a significant relation with approximately 150 participants.

For this study, we retained the 247 people (observed power = .96; $M_{age} = 35.05, SD = 15.77, range = 18-99; 67.1\%$ female; 65.2% Caucasian) who completed the EBTS (Howell et al., 2012; $M = 4.65, SD = 1.30, \alpha = .82$) and a spending recollection study. For the spending recollection study, participants were randomly assigned to write about a material purchase and then an experiential purchase or an experiential purchase and then a material purchase (with the order being counterbalanced across subjects). In this within-subjects design, after they wrote about each purchase

Table 3
Testing mediated moderation (Study 2)

Model	Testing Identity as the Mediator of the Purchase Type × EBTS Interaction Regression Analysis 1										Testing Relatedness as the Mediator of the Purchase Type × EBTS Interaction Regression Analysis 2									
	Mediator: Identity Satisfaction $F(11, 316) = 8.47, p < .001; R^2 = .19$					Outcome: Purchase Happiness $F(12, 316) = 23.13, p < .001; R^2 = .47$					Mediator: Relatedness Satisfaction $F(11, 316) = 7.97, p < .001; R^2 = .22$					Outcome: Purchase Happiness $F(12, 316) = 16.85, p < .001; R^2 = .39$				
	B	SE	β	CI Low	CI Up	B	SE	β	CI Low	CI Up	B	SE	β	CI Low	CI Up	B	SE	β	CI Low	CI Up
Constant	4.02	.09		3.847	4.20	4.22	.08		4.07	4.38	3.56	.09		3.38	3.73	4.21	.08		4.05	4.37
Identity	–	–	–	–	–	.48	.05	.46**	.38	.58	–	–	–	–	–	.34	.06	.34**	.23	.45
Purchase	.77	.18	.22**	.41	1.12	.27	.16	.07	–.04	.58	1.29	.19	.36**	.92	1.66	.20	.19	.05	–.17	.57
EBTS	.10	.07	.09	–.03	.24	.01	.06	.01	–.10	.13	.04	.07	.03	–.10	.18	.05	.06	.04	–.07	.17
Purchase × EBTS	.49	.14	.20**	.21	.77	.17	.12	.07	–.05	.40	.23	.14	.09	–.06	.51	.33	.13	.13**	.08	.58
Purchase Valence	.76	.18	.22**	.40	1.13	1.08	.17	.30**	.74	1.42	.66	.18	.18**	.29	1.02	1.22	.18	.34**	.87	1.58
Purchase Cost	.17	.09	.10	–.02	.35	.17	.07	.09	.02	.31	.19	.13	.10	–.06	.43	.18	.08	.10*	.03	.34
Purchase Recency	–.08	.10	–.05	–.29	.12	–.20	.09	–.11*	–.37	–.03	–.14	.09	–.08	–.33	.04	–.19	.09	–.10*	–.37	–.01

Note. Conditions (Material = –.50, Experiential = .50), Valence (Negative = –.50, Positive = .50); all other variables are mean centered. EBTS is experiential buying tendency scale. In all analyses we control for the Big Five personality traits; however, none of the traits are significant any of the regression models.

* $p < .05$.
** $p < .01$

and evaluated their purchase happiness ($M_{Experiential} = 4.69, SD = 1.52, \alpha = .92; M_{Material} = 4.11, SD = 1.51, \alpha = .90$) using the same items as Study 1 as well as their identity expression ($M_{Experiential} = 4.51, SD = 1.86, \alpha = .91; M_{Material} = 3.88, SD = 1.84, \alpha = .91$) and relatedness satisfaction ($M_{Experiential} = 4.17, SD = 1.86, \alpha = .81; M_{Material} = 2.64, SD = 1.75, \alpha = .86$) using the same items from Study 2. They then categorized their purchases and reported the cost as well as time elapsed since purchase.

5.2. Results

5.2.1. Preliminary analyses

To ensure participants followed instructions, we examined the type of purchases they categorized. This manipulation check revealed that when participants recalled an experiential purchase, they reported a greater percentage of life experiences (e.g., dinners) than when they recalled a material purchase, $\chi^2 = 741.71, p < .001$. Importantly, two dependent sample *t*-tests revealed that the cost of the purchase did not differ between material ($M = \$400.96, SD = \2578.10) and experiential ($M = \$418.44, SD = \2330.72) purchases, $t(247) = 0.13, p = .89$; nor did the time elapsed since differ between the purchases ($M_{material} = 274.85$ days, $SD = 991.83$ and $M_{experiential} = 251.98$ days, $SD = 300.64$), $t(247) = –0.64, p = .52$. Finally, the results did not differ with or without price and time elapsed in the models, and thus, we omitted them from our analyses.

5.2.2. Testing for moderation of the experiential advantage using a within subjects design

As stated above, the procedures to test for moderation in a within subjects design are different than the procedures used for between a subjects design. Specifically, in a within subjects design, regression models are employed to test for moderation by forming a difference score between the two conditions (i.e., “the basic model;” see Judd, Kenny, & McClelland, 2001). Then, a treatment effect, or significant difference between the two conditions, is demonstrated by the average difference score being statistically larger or smaller than zero. To test for moderation of a treatment effect, one examines if an individual difference variable is related to the difference score. That is, if an individual difference variable is correlated with the difference score, then the treatment effect is not consistent across all levels of the individual difference variable—thus, for some people the difference between the two conditions is larger and for others the difference is smaller (i.e., moderation). Therefore, to test for moderation in a within subjects design, we must demonstrate a statistically significant relation between the difference score and an individual difference variable (Judd, Kenny, & McClelland, 2001).

We note this important deviation from the between subjects model, because, as Judd et al. stated, “moderation in the within-subject case may seem a bit strange, because we are not forming a product” (p. 120). Therefore, we tested whether our purchase type by buying tendency interaction predicted purchase happiness, identity expression, and relatedness satisfaction by: (a) subtracting the material condition ratings from the experiential condition ratings (i.e., a positive value would indicate life experiences result in more happiness, identity, or relatedness), (b) determining if these differences scores are significantly different from zero, and (c) testing for moderation by regressing the difference scores on the EBTS (mean centered). If an experiential buying tendency moderates the experiential advantage, then the EBTS will predict these difference scores.

First, we formed the differences scores for purchase happiness, identity expression, and relatedness satisfaction. All three outcomes were positive ($M_D_{Hedonic} = .62, SD = 1.70; M_D_{Identity} = .55, SD = 2.27; M_D_{Relatedness} = 1.98, SD = 2.15$) and statistically greater

than zero ($t[246] = 5.71, p < .001, t[246] = 3.82, p < .001, t[246] = 14.43, p < .001$) which demonstrates experiential purchases were rated as producing more happiness, identity, and relatedness. Next, we examined the Pearson correlations between the difference scores and experiential tendencies. The EBTS was positively, and significantly, correlated with the difference score for happiness ($r = .23, p < .001$) and identity ($r = .28, p < .001$)—this indicates that, for happiness and identity, as scores on the EBTS increase, the difference between life experiences and material items increases (i.e., moderation). However, the EBTS was not correlated with the difference score for relatedness ($r = .09, p = .15$); thus, the increase in relatedness for life experiences, compared to material items, is large and consistent for both experiential and material buyers (i.e., relatedness does not moderate the experiential advantage).

5.2.3. Replicating identity as the mediator of the moderation

Because the EBTS was correlated with the difference scores for purchase happiness and identity expression, we regressed these difference scores on the EBTS (mean centered). Also, in order to replicate the mediated moderation model from Study 2, we examined whether identity expression explains why material buyers, relative to experiential buyers, reported more equivalent levels of purchase happiness from their material and experiential purchases. We examined support for mediated moderation by testing a simple path model (Model 4 from the Hayes PROCESS macro; see Hayes, 2013), in which we tested if the difference score for identity expression mediated the path from the EBTS to the difference score in purchase happiness. Again, because a significant path from the EBTS to the difference score for purchase happiness supports moderation in a within subjects design (see Judd et al., 2001), if the difference score for identity expression mediates this path, mediated moderation would be supported. We did not examine the difference score for relatedness as a mediator because it was not related to the EBTS. Finally, we tested a reverse causation mediation model (i.e., if the difference score for purchase happiness mediated the path from the EBTS to the difference score in identity satisfaction). Both of these models are reported in Table 4.

In the first model, the EBTS was related to the difference score for purchase happiness ($B = .28, SE = .07, 95\% CI = [.14, .42], t = 3.82, p < .001$). However, this relation was no longer significant when we entered the identity expression difference score into the model ($B = .09, SE = .06, 95\% CI = [-.04, .21], t = 1.39, p = .17$). In short, the EBTS predicted the difference score in identity expression, the difference score in identity expression predicted the difference score in purchase happiness, and the indirect effect through the difference score in identity expression was significant ($B = .19, SE = .05, 95\% CI = [.10, .31], t = 3.58, p < .001$). In the second model, the EBTS was related to the difference score for identity expression ($B = .44, SE = .10, 95\% CI = [.25, .64], t = 4.59, p < .001$). Also, this relation was still significant when we entered the purchase happiness difference score into the model ($B = .23, SE = .08, 95\% CI = [.07, .39], t = 2.84, p = .005$). Thus, there is no support for reverse causation. In sum, the findings indicate that increased identity expression explains why experiential buyers, compared to material buyers, are happier with their life experiences than material items.

6. General discussion

Prior research suggests that experiential purchases make people happier than material purchases (Howell & Hill, 2009; Millar & Thomas, 2009; Nicolao et al., 2009; Van Boven & Gilovich, 2003). However, across three studies, using between and within subjects designs, the current investigation found that the experiential

Table 4
Testing mediated moderation (Study 3).

Model	Analysis 1: Predicting Purchase Happiness Difference Score				Analysis 2: Predicting Identity Expression Difference Score					
	B	SE	β	95% CI Lower	95% CI Upper	B	SE	β	95% CI Lower	95% CI Upper
Step 1	Analysis 1: Predicting Purchase Happiness Difference Score				Analysis 2: Predicting Identity Expression Difference Score					
Constant	.62	.11		.42	.83	.55	.14		.28	.83
EBTS	.28	.07	.24**	.14	.42	.44	.10	.28**	.25	.64
Step 2	Analysis 1: Predicting Purchase Happiness Difference Score				Analysis 2: Predicting Identity Expression Difference Score					
Constant	.62	.09		.45	.79	.54	.11		.32	.77
EBTS	.09	.06	.07	-.04	.21	.23	.08	.15**	.07	.39
Identity Satisfaction	.43	.04	.58**	.36	.51	.76	.07	.57**	.62	.90

Note. The EBTS is the mean centered experiential buying tendency scale. Both identity expression and purchase happiness were entered into each regression analysis (Step 2) after being mean centered. Because Study 3 used a within subjects design, the outcomes of interest are difference scores between the experiential and material purchase conditions (where higher scores indicate higher ratings for life experiences). The constant in each analysis can be interpreted as an increase in either purchase happiness or identity expression when reflecting on a life experience compared to a material item. When the EBTS is significant in the models, it demonstrates buying tendencies moderate the increase in well-being from life experiences compared to material items. These results demonstrate that the EBTS moderates the hedonic experiential advantage because experiential buyers enjoy more identity satisfaction from their life experiences compared to their material items.

recommendation does not lead to greater happiness for material buyers. Specifically, material buyers, relative to experiential buyers, reported the same level of happiness from their experiential and material purchases. This effect was explained by experiential buyers reporting that life experiences, compared to material items, expressed important aspects of their identities (i.e., increased identity expression); however, material buyers did not enjoy the hedonic benefits of life experiences because they did not experience an increase in identity expression through experiential consumption. Also, relatedness satisfaction was not a significant mediator of the purchase type by buying tendency interaction (Studies 2 and 3), indicating that both experiential and material buyers experienced more relatedness satisfaction from experiential consumption. Finally, unlike previous studies (Millar & Thomas, 2009; Nicolao et al., 2009), we did not find materialism—traditionally defined as an attitudinal construct—moderated the experiential advantage. Instead our null results were consistent with Thomas (2010) as well as Carter and Gilovich (2012). Happiness was, however, dependent on people's buying tendencies.

Thus, it appears that while materialistic values do not impact the hedonic benefits of life experiences, the tendency to actually spend money on life experiences does. It is important to note that this pattern cannot be explained by situation selection effects (Sherman, Nave, & Funder, 2010), which would predict that people's underlying behavioral traits leads them to experience situations that are qualitatively different from the situations that other people with different traits experience. We suggest this because the qualities of the different purchases recalled by participants did not systematically vary between experiential and material buyers in terms of cost, time, valence, category, or quality. Therefore, our pattern of results cannot be attributed to material buyers and experiential buyers recalling qualitatively different experiential and material purchases.

6.1. Implications and future directions

6.1.1. Why do buying tendencies, not values, moderate the experiential advantage?

One important contribution of the current research is the demonstration of a robust, behaviorally-defined individual difference moderator of the experiential advantage. Our results help to clarify why sometimes materialistic values attenuate the benefits of experiential purchases (see Millar and Thomas (2009) and Nicolao et al. (2009)) while other times they do not (see Thomas (2010) and Carter and Gilovich (2012)). The present research corroborates the latter set of findings by demonstrating materialistic values do not attenuate the benefits of experiential purchases; however, we find that buying tendencies do attenuate the benefits of experiential purchases. Importantly, the procedures we employed were directly comparable to these previous studies (Millar & Thomas, 2009; Nicolao et al., 2009), indicating that the differences in results between these studies cannot be attributed to differences in methods. Overall, these results support the argument that behavioral buying tendencies offer unique insight into how consumers gain happiness from discretionary spending.

However, the divergence between values and behaviors also raises the broader question as to why value effects are so inconsistent. Prior research on the study of individuals' value systems may explain this pattern of results. Value scholars have argued that specific values (e.g., materialism) must be studied as part of a larger system of value within individuals (Rokeach, 1973; Schwartz, 1992). This perspective suggests that whether materialism is associated with purchase happiness may depend on the other values that an individual embraces. For instance, according to the conflicting values perspective, individuals may simultaneously possess both materialistic values, which are relatively self-oriented, and

collective-oriented values, which are relatively communal (Burroughs & Rindfleisch, 2002). In cases such as these, individuals who possess both sets of values within their larger value systems may be less happy than individuals who do not have conflicting values such as these. In one study, for example, materialism conflicted with religious values to predict lower well-being among highly religious but not among less religious individuals; this conflict was mediated by psychological stress (Burroughs & Rindfleisch, 2002). By considering the value system approach, future research could find ways to reconcile the disparate findings on the effects of materialistic values on purchase happiness. Of course, our research was not designed to address this issue directly, but instead offer a potential, stable solution through the EBTS. Thus, these suggestions should be considered speculative.

6.1.2. Why do experiential buyers enjoy the hedonic benefits of life experiences?

One important contribution of the current research is that we found that identity expression mediated the purchase type by buying tendency interaction on purchase happiness. The results in Studies 2 and 3 point to a simple conclusion—experiential buyers, compared to material buyers, are happier with their life experiences because they make experiential purchases that are more reflective of their sense of self. These findings are consistent with those of Carter and Gilovich (2012), who found that experiences are rated as psychologically closer to the self than possessions. Our results extend this research by showing that people's behavioral buying tendencies represent an important qualifying trait. Also, these results extend past research showing that intrinsically motivated experiential consumption (e.g., "life experiences represent the kind of person I am") is associated with more psychological need satisfaction and happiness; importantly, experiential buyers tend to engage in more intrinsically motivated experiential consumption (Zhang, Howell, & Caprariello, 2012).

Also, the result that experiential buyers report more happiness from their life experiences, compared to their material items, is consistent with a number of theories in personality research. For example, self-concordance research would argue that experiences should make experiential buyers happier than material items because the act of buying experiences is consistent with their underlying trait, whereas the act of buying material items is inconsistent (Sheldon & Elliot, 1999). An authenticity argument would make a similar claim; experiential buyers should be happier when buying experiences because experiences should more closely express their identities than possessions (Sheldon, Ryan, Rawsthorne, & Ilardi, 1997). This prediction is entirely consistent with our pattern of mediated moderation through identity expression. Finally, research on overall behavioral congruence would make a similar argument—for experiential buyers, buying experiences is a match between the person's behavior and trait, and that this is an example of overall congruence, which leads to well-being (Sherman et al., 2012). Thus, multiple theories from personality psychology make overlapping predictions: experientialists should be happier with their life experiences than they are with their material possessions.

6.1.3. Why do material buyers experience the same hedonic well-being from their purchases?

It is worth noting that the personality theories above only explain some of our results. Specifically, the tenets of the theories above predict that material buyers should be happier when they buy possessions than when they buy experiences for all the same reasons that experiential buyers are happier when they buy experiences (i.e., because the act of buying material items is consistent with their underlying trait and material items should more closely express their identities than experiences). Thus, while the

experience recommendation would predict that materialists should enjoy the experiential advantage (though their slope may be less steep than that of experientialists), self-concordance and authenticity theories of personality would predict that materialists should enjoy their material items more than their life experiences (though their negative slope would need to be less steep because of the observed main effect). However, in the present research, we find that material buyers do not differ in the happiness they derive from their material items and life experiences. Again, neither self-concordance or authenticity nor the experience recommendation would predict that the slope is flat for material buyers.

How can this be explained? Although this explanation clearly warrants further research, there is at least one line of theorizing that can explain why material buyers experience equivalent happiness from their material items and life experiences. Recently, personality researchers have distinguished overall congruence (i.e., matching one's behavior with their personality in a given situation) from distinctive congruence, defined as the degree to which one's behavior matches his or her personality, but in cases in which one's personality is atypical or non-normative (Baird, Le, & Lucas, 2006; Fleeson & Wilt, 2010; Sherman et al., 2012). When these two personality processes are evaluated separately, overall congruence is positively associated with well-being but distinctive congruence is not (Sherman et al., 2012). Thus, there is reason to believe that the pattern for material buyers may be due in part to the fact that the personality profile for materialists is more distinctive than it is normative. For example, people tend to dislike materialists, judge them unfavorably, consider them not well-adjusted, and generally distance themselves from them (Kasser, 2002; Kasser et al., 2004; Van Boven et al., 2010).

Therefore, we believe when material buyers purchase material possessions, which is consistent with their personality, they do not experience increased well-being because this behavior represents distinctive congruence more than it represents normative congruence. Further, as our mediated moderation models demonstrate, when material buyers purchase life experiences, which are inconsistent with their personality, they fail to feel authenticity in their consumption and do not enjoy the hedonic benefits of life experiences. Thus, we might say that material buyers are “damned if they do and damned if they don't.” That is, they enjoy their material consumption less than would be expected because this behavior is a form of distinctive congruence, while they enjoy their experiential consumption less than would be expected because this behavior is inauthentic. The validity of this explanation awaits future research, but the potential link between non-normative behavioral congruence and well-being for material buyers is clear.

6.2. Limitations

Despite the robustness of our results, some limitations should be considered. One, we relied on recollection procedures and self-reported methods. Although virtually all of the research on experiential consumption has relied on self-reports and recollection paradigms (see Carter & Gilovich, 2012; Nicolao et al., 2009, for two exceptions), future research can benefit from more diverse methodological approaches (e.g., daily diaries, peer reports, experience sampling, etc.). Another important limitation of this research and the experiential purchase literature in general is a lack of cross-cultural replication. We speculate that different kinds of experiences are valued differently across cultures (e.g., in terms of accomplishing personally relevant goals versus attaining collectively important experiences, Markus & Kitayama, 1991). Experiences that differ along culturally relevant dimensions may satisfy fundamentally different needs and may contain qualities that distinguish for whom different experiences lead to happiness. For instance, experiences that are more novel and personally relevant

(e.g., backpacking alone across Europe after graduating from college) may bring greater happiness to individuals who define themselves in terms of independence than experiences that are less novel but are culturally relevant (e.g., pilgrimaging to a holy land with a group of like-minded believers), which would likely benefit individuals who define themselves collectively (Triandis, 1989). Future research would benefit from exploring these kinds of cross-cultural investigations.

7. Conclusion

One issue that confronts many people is how they can better spend their money to make themselves happy. Buying life experiences has been advocated as a path to happiness. However, our studies suggest that, for some people (i.e., material buyers), the experience recommendation (Fromm, 1976; Van Boven & Gilovich, 2003) is not a reliable path to greater happiness. However, the current research also indicated a possible solution in which material buyers can gain happiness from their life experiences—consume life experiences which reflect their true self. We hope that these results will lead to future research developing a more nuanced understanding of the processes that underline the experiential advantage. Furthermore, it is in the interest of psychology researchers to understand how materialists can hedonically benefit and express their identities through consumption practices. If it is true that material buyers are not expressing their identities through life experiences (and therefore not reaping hedonic benefits), the results of the present study show that they are also not expressing their identities through and reaping happiness from material possessions, despite the wealth of theorizing that suggests the opposite. By gaining a greater knowledge of who benefits from life experiences and those who do not, we can expand our understanding of the hedonic benefits of experiential consumption as well as help provide solutions for societal problems that result from materialism.

Acknowledgments

Jia Wei Zhang is supported by a National Science Foundation Graduate Research Fellowship.

We thank Jason Samaha and Travis Riddle for their wonderful assistance with plotting the interactions in Study 1 and Study 2.

References

- Aristotle (1962). *The politics*, translated by J.A. Sinclair. Harmondsworth: Penguin.
- Belk, R. W. (1985). Three scales to measure constructs related to materialism: Reliability, validity, and relationships to measures of happiness. *Advances in Consumer Research*, 11, 291–297.
- Baird, B. M., Le, K., & Lucas, R. E. (2006). On the nature of intraindividual personality variability: Reliability, validity, and associations with well-being. *Journal of Personality and Social Psychology*, 90, 512.
- Bhattacharjee, A., & Mogilner, C. (2014). Happiness from ordinary and extraordinary experiences. *Journal of Consumer Research*, 41.
- Burroughs, J. E., & Rindfleisch, A. (2002). Materialism and well-being: A conflicting values perspective. *Journal of Consumer Research*, 29, 348–370.
- Capriello, P. A., & Reis, H. T. (2013). To do, to have, or to share? Valuing experiences over material possessions depends on the involvement of others. *Journal of Personality and Social Psychology*, 104, 199–215.
- Carter, T. J., & Gilovich, T. (2012). I am what I am, not what I have: The differential centrality of experiential and material purchases to the self. *Journal of Personality and Social Psychology*, 102, 1304–1317.
- Carter, T. J., & Gilovich, T. (2010). The relative relativity of material and experiential purchases. *Journal of Personality and Social Psychology*, 98, 146.
- Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49, 71–75.
- Dunn, E. W., Gilbert, D. T., & Wilson, T. D. (2011). If money doesn't make you happy, then you probably aren't spending it right. *Journal of Consumer Psychology*, 21, 115–125.
- Ferraro, R., Escalas, J. E., & Bettman, J. R. (2011). Our possessions, our selves: Domains of self-worth and the possession–self link. *Journal of Consumer Psychology*, 21, 169–177.

- Fleeson, W., & Wilt, J. (2010). The relevance of big five trait content in behavior to subjective authenticity: Do high levels of within-person behavioral variability undermine or enable authenticity achievement? *Journal of Personality*, 78, 1353–1382.
- Frederickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56, 218–226.
- Fromm, E. (1976). *To have or to be?* New York: Harper & Row.
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B. Jr., (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, 37, 504–528.
- Hayes, A. F. (2013). *An introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: The Guilford Press.
- Howell, R. T., Pchelin, P., & Iyer, R. (2012). The preference for experiences over possessions: Measurement and construct validation of the experiential buying scale. *Journal of Positive Psychology*, 7, 57–71.
- Howell, R. T., & Hill, G. (2009). The mediators of experiential purchases: Determining the impact of psychological needs satisfaction and social comparison. *The Journal of Positive Psychology*, 4, 511–522.
- Howell, R. T., & Howell, C. J. (2008). The relation of economic status to subjective well-being in developing countries: A meta-analysis. *Psychological Bulletin*, 134, 536.
- Judd, C. M., Kenny, D. A., & McClelland, G. H. (2001). Estimating and testing mediation and moderation in within-subject designs. *Psychological Methods*, 6, 115.
- Kashdan, T. b., & Breen, W. E. (2007). Materialism and diminished well-being: Experiential avoidance as a mediating mechanism. *Journal of Social and Clinical Psychology*, 26, 521–539.
- Kasser, T., Cohn, S., Kanner, A. D., & Ryan, R. M. (2007). Some costs of American corporate capitalism: A psychological exploration of value and goal conflicts. *Psychological Inquiry*, 18, 1–22.
- Kasser, T., Ryan, R. M., Couchman, C., & Sheldon, K. M. (2004). Materialistic values: Their causes and consequences. In T. Kasser & A. Kanner (Eds.), *Psychology and consumer culture: The struggle for a good life in a materialistic world* (pp. 11–28). Washington, DC, US: American Psychological Association.
- Kasser, T. (2002). *The high price of materialism*. Cambridge, MA: MIT Press.
- Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, 65, 410–422.
- Kumar, A., Mann, T., & Gilovich, T. (2014). There is no “I” in adventure: Experiential purchases foster social connection (in preparation).
- Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, 9, 111–131.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224.
- McHoskey, J. W. (1999). Machiavellianism, intrinsic versus extrinsic goals, and social interest: A self-determination theory analysis. *Motivation and Emotion*, 23, 267–283.
- Millar, M., & Thomas, R. (2009). Discretionary activity and happiness: The role of materialism. *Journal of Research in Personality*, 43, 699–702.
- Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, 89, 852.
- Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist*, 55, 56.
- Nicolao, L., Irwin, J. R., & Goodman, J. K. (2009). Happiness for sale: Do experiential purchases make consumers happier than material purchases? *Journal of Consumer Research*, 36, 188–198.
- Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009). The path taken: Consequences of attaining intrinsic and extrinsic aspirations in post-college life. *Journal of Research in Personality*, 43, 291–306.
- Otero-López, J. M., & Villardefrancos, E. (2013). Five-Factor Model personality traits, materialism, and excessive buying: A mediational analysis. *Personality and Individual Differences*, 54, 767–772.
- Pchelin, P., & Howell, R. T. (2014). The hidden cost of value-seeking: People do not accurately forecast the economic benefits of experiential purchases. *Journal of Positive Psychology*.
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42, 185–227.
- Richins, M. L. (2004). The material values scale: Measurement properties and development of short form. *Journal of Consumer Research*, 31, 209–219.
- Richins, M. L., & Dawson, S. (1992). A consumer values orientation for materialism and its measurement: Scale development and validation. *Journal of Consumer Research*, 19, 303–316.
- Rokeach, M. (1973). *The nature of human values*. Free Press.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68–78.
- Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need-satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology*, 76, 482–497.
- Sheldon, K. M., Ryan, R. M., Rawsthorne, L. J., & Ilardi, B. (1997). Trait self and true self: Cross-role variation in the big-five personality traits and its relations with psychological authenticity and subjective wellbeing. *Journal of Personality and Social Psychology*, 73, 1380–1393.
- Sheldon, K. M., & Kasser, T. (1995). Coherence and congruence: Two aspects of personality integration. *Journal of Personality and Social Psychology*, 68, 531.
- Sherman, R. A., Nave, C. S., & Funder, D. C. (2012). Properties of persons and situations related to overall and distinctive personality-behavior congruence. *Journal of Research in Personality*, 46, 87–101.
- Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of Personality and Social Psychology*, 99, 330.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1–65.
- Tatzel, M. (2003). The art of buying: Coming to terms with money and materialism. *Journal of Happiness Studies*, 4, 405–435.
- Thomas, R. L. (2010). Mediating and moderating variables between discretionary purchases and happiness. Unpublished Dissertation.
- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, 96, 506.
- Van Boven, L., Campbell, M. C., & Gilovich, T. (2010). Stigmatizing materialism: On stereotypes and impressions of materialistic and experiential pursuits. *Personality and Social Psychology Bulletin*, 36, 551–563.
- Van Boven, L., & Gilovich, T. (2003). To do or to have? That is the question. *Journal of Personality and Social Psychology*, 85, 1193–1202.
- Zhang, J. W., Howell, R. T., & Iyer, R. (2014). Engagement with natural beauty moderates the positive relation between connectedness with nature and psychological well-being. *Journal of Environmental Psychology*, 38, 55–63.
- Zhang, J. W., Piff, K. P., Iyer, R., Koleva, S., & Keltner, D. (2014). An occasion for unselfing: Beautiful nature leads to prosociality. *Journal of Environmental Psychology*, 37, 61–72.
- Zhang, J. W., Howell, R. T., & Capriello, P. A. (2012). Buying life experiences for the “right” reasons: A validation of the motivations for experiential buying scale. *Journal of Happiness Studies*, 1–26.