

# Materialism, Spending, and Affect: An Event-Sampling Study of Marketplace Behavior and Its Affective Costs

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**Abstract** Research on materialism has burgeoned in the last two decades, yet little is known about how people higher versus lower in this consumer values orientation differ in their day-to-day spending habits and in their emotional reactions to spending on purchases. The present study used an event-sampling method over a 3-week period to address these questions in a community adult sample. Results showed that over the course of the sampling period, high materialists made more discretionary purchases and spent more money on necessity purchases than did those lower in materialism, even though their incomes did not differ. Despite higher levels of spending, high materialists experienced a “letdown” after spending, as they reported more post-purchase unpleasant affect than did low materialists. This result was not moderated by level of dispositional unpleasant affect, purchase type, or purchase amounts.

**Keywords** Materialism · Consumer behavior · Behavioral economics · Well-being · Emotional states

## 1 Introduction

The relations between people’s values, their spending choices, and their emotional experiences are of key interest to many psychologists and consumer researchers. One approach to studying these questions has been to investigate materialism, the value that a person

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places on the acquisition and possession of material objects (Kasser 2002; Richins and Dawson 1992). Compared to those low in materialism, people who place a relatively high priority on materialistic aims report lower levels of personal well-being (Dittmar et al. 2014), relate to other people in ways characterized by Machiavellian, competitive, and prejudicial attitudes (Duriez et al. 2007; McHoskey 1999; Sheldon et al. 2000), and have less sustainable ecological attitudes and behaviors (Hurst et al. 2013), in addition to a variety of other problematic outcomes (see Kasser in press, for a review).

Rather surprisingly, we are unaware of any studies that have prospectively investigated whether people who vary in materialism actually behave differently in their day-to-day spending behaviors, and whether they have different emotional experiences after spending their money. The present study addressed these topics by examining the relations of materialism to in vivo, everyday spending behavior, and to the emotions associated with such behavior, amongst a cross section of North American adults.

## 1.1 Materialism and Economic Activity

Some past research has examined how a materialistic orientation relates to desired economic circumstances, patterns of hypothetical expenditures or acquisition, responses to spending scenarios, and spending dreams or wishes. For example, Richins and Rudmin (1994) found that, relative to those lower in materialism, people higher in materialism desired a higher income and reported wanting to spend more of a monetary gift on themselves rather than on others. In a study of “wish lists” and consumption dreams, Fournier and Guiry (1993) found that materialism was related to a stronger preference for tangible possessions over fleeting experiences, to more frequent wishes for consumer goods, and to more playful dreaming about purchases. In another hypothetical scenario study, compared to adolescents low in materialism, those high in materialism imagined spending more on themselves and saving less after a financial windfall (Kasser 2005). Using self-reports of past behavior, Watson (2003) found that materialists reported higher levels of spending and lower levels of saving and investment (see also Donnelly et al. 2012; Otero-López and Villardefrancos 2013), while other survey research has found materialism to be associated with higher debt among working adults (e.g., Garðarsdóttir and Dittmar 2012; Nepomuceno and Laroche 2015). A survey study of economic behavior among adolescents also found that, relative to teens who cared less about materialistic values, more materialistic teens reported a higher frequency of shopping, less saving, a greater interest in new products, and higher monetary expectations for gifts (Goldberg et al. 2003).

Such research helps establish the validity of the materialism construct, but thus far (to our knowledge) this body of literature has relied exclusively on imaginary scenarios or self-reports of past behavior. As such, it is still unclear whether materialism is *prospectively* associated with higher levels of actual spending, despite the fact that calls for such research are more than 20 years old (e.g., Richins and Rudmin 1994). Thus, one of the primary purposes of the present research was to better understand the materialism construct by examining prospective relations between materialistic values and day-to-day spending behavior. Guided by research showing that materialism is associated with valuing acquisition and ownership, we predicted that, compared to people lower in materialism, people high in materialism would show relatively high levels of marketplace spending activity when asked to keep diary records of their purchases over 3 weeks. In an attempt to replicate past research, we also predicted that materialists would show evidence of higher past spending, reflected in their ownership of more possessions.

## 1.2 Materialism, Spending, and Affect

People's level of materialism is known to be related to their emotional experience. Dittmar et al.'s (2014) meta-analysis found that materialism was associated with lower levels of positive affect (across 9 studies with 9686 participants) and with higher levels of negative affect (across 24 studies with 4749 participants), depression (across 22 studies with 8651 participants), and anxiety (across 12 studies with 1659 participants). In contrast, the evidence is rather sparse and mixed regarding how materialism relates to people's affective experience after spending their money on a purchase. On the one hand, Hudders and Pandelaere (2012) found a stronger positive association between luxury purchases and life satisfaction among those scoring higher in materialism than those lower in materialism. On the other hand, Richins (2013) found that materialism was related to retrospective reports of higher negative affect after making an expensive purchase. This literature is complicated further by evidence suggesting that people with strong materialistic values may be especially poor affective forecasters (Wilson and Gilbert 2003). Specifically, Sheldon et al. (2010) found that even though happiness was relatively low among people with strong extrinsic values (which involve a high valuation of money and material acquisition; Kasser and Ryan 1996), such individuals nonetheless continued to believe that attaining their extrinsic goals would lead to happiness. The accuracy of this belief is contradicted by evidence showing that progress at (Sheldon and Kasser 1998) and attainment of (Niemic et al. 2009) extrinsic goals does little or nothing to improve people's well-being and affective state.

Given this mixed literature, we considered two competing possibilities regarding how materialism relates to affective experience after spending money on a purchase. One possibility is that "*buyer's reward*" may occur, given that it is in the act of spending that people high in materialism are most in their element. For this reason, even if high materialists' desire "to have" is associated with less pleasant affective states at a global level, perhaps the act of "getting what one wants" provides high materialists with at least momentary happiness. Alternatively, "*buyer's letdown*" may occur for high materialists after spending their money. If materialistic pursuits are inherently unfulfilling, as has been suggested for thousands of years by philosophers and religious leaders (Belk 1985), perhaps once people high in materialism actually spend their money, they at some level recognize that the act has not been truly fulfilling. Or perhaps the act of spending, which necessarily involves parting with one's money, creates a value conflict for people high in materialism that undermines their affective state.

Because the extant research has not examined potential associations between the act of day-to-day spending itself and momentary affect in people higher and lower in materialism, we set out to examine this issue. Based on theory and previous research (e.g., Machleit and Eroglu 2000; Richins 2013), we expected that spending behavior in of itself would not show a simple relation to affective outcomes. However, we were openly interested in the potential relation between materialism and affective experience after spending, as summarized in the two competing conjectures stated above. Would spending enhance affective experience (a buyer's reward) for people high in materialism when their material desires were gratified? Or would spending have a deleterious effect on emotional experience (a buyer's letdown) given that high materialists have invested their time, energy, and money in a behavior that largely fails to satisfy and that separates them from their money (which they also value)? Tracking the day-to-day spending behavior and affective experience of individuals varying in their levels of materialism offered an opportunity to address these questions.

### 1.3 Overview of the Present Research

The present study was designed to explore the two related, key issues discussed above concerning the relation of materialism to spending and its affective consequences. First, we examined the effect of materialism on spending, predicting that compared to those who were less materially-focused, more materialistic individuals would report higher levels of possession ownership (i.e., past spending) and report more spending in day-to-day, point of purchase diaries. Because individuals with more financial resources (income) might be expected to spend at higher levels, we controlled for the effect of income on spending when testing our predictions concerning materialism. Second, we examined the association between the act of spending and emotional experience in individuals varying in level of materialism with the aim of testing the buyer's reward and buyer's letdown alternatives.

To address our questions, one-occasion and event-sampling procedures were used in the present research. At study entry, self-report measures of materialism, dispositional pleasant and unpleasant affect, income, and possessions were collected. Then, over a three-week period, marketplace activity and both pleasant and unpleasant affect were assessed whenever participants spent above a minimum monetary threshold on necessity and discretionary goods and services. In addition to our attempt to address the conceptual issues described above, this study also thereby extended the methodological reach of materialism research in several ways. First, we recruited working men and women from a broad socioeconomic and demographic spectrum; much materialism research has focused on student samples rather than employed adults. Second, we used a marketplace diary methodology to assess economic activity and affective well-being, thereby permitting a close, in vivo examination of the behavior and subjective experience of individuals in a values-relevant environment. Finally, pairing one-occasion with diary measures of spending allowed us to examine the consistency of findings across different methodologies.

## 2 Method

### 2.1 Participants

Individuals responding to local Rochester, NY newspaper and poster advertisements were invited to participate if they met four criteria: (1) they were at least 18 years old; (2) they were currently employed at least 30 h per week in the daytime;<sup>1</sup> (3) they were the primary or co-primary spender of their household's money; and (4) they spent money at least three times per week. This final criterion was set to ensure sufficient data for the event (marketplace)-sampling analyses (see below). Approximately 200 phone calls were received, in response to which the study was briefly described as "designed to help us learn more about everyday spending patterns and habits" and the screening was conducted. In total, 83 participants were enrolled. Of these, data from 9 participants were excluded—7 due to failure to complete the diary sampling phase of the study, and 2 due to a large number of sampling forms completed incorrectly. Thus, 74 participants (55 % female) successfully completed the 3-week study.

Participants' average age was 37.6 (range 18–62 years). Most were Caucasian (87.8 %); 2.7 % were Asian, 2.7 % were African American, 4.1 % were Native American, and 2.7 %

<sup>1</sup> The criterion that individuals be working in the daytime helped to ensure that there was homogeneity in diurnal activity patterns across participants.

reported another ethnicity. Among our participants 39.2 % were married, 18.9 % were cohabitating, 23 % were single, and 18.9 % were separated, divorced, or widowed. The sample was generally well educated—73 % had completed at least some college, and another 27 % had post-graduate training. In return for completing the study, each participant received a personalized research report and \$50.

## 2.2 General Procedure

Participants completed all one-occasion measures (see below) and then were trained in the use of event-sampling forms in a single introductory session. These sessions were conducted on Mondays and Tuesdays, and all participants began the 21-day sampling portion of the study on the immediately following Wednesday. Keeping the starting day constant helped to control for day-of-week effects in the sampling data (Reis et al. 2000). Participants were encouraged to maintain their normal behavior and routines for the duration of the study.

## 2.3 One-Occasion Measures

### 2.3.1 Materialism

The 18-item Material Values Scale (MVS; Richins and Dawson 1992) was used to assess materialism (sample Cronbach's alpha = .86). Sample items included '*My life would be better if I owned certain things I don't have*' and '*Buying things gives me a lot of pleasure.*' The scale has been validated with community adults (Richins and Dawson 1992) and has shown convergent validity with other measures of materialism (Kasser and Ahuvia 2002).

### 2.3.2 Dispositional Affect

The 9-item Diener and Emmons (1984) scale of pleasant-unpleasant affect valence was also completed. Using a 7-point scale ("not at all" to "extremely"), participants reported their emotional state "over the past week" on the following adjectives: *happy, worried/anxious, frustrated, pleased, angry/hostile, enjoyment/fun, unhappy, depressed/blue* and *joyful*. The sample alphas for pleasant and unpleasant affect were .86 and .78, respectively.

### 2.3.3 Material Resources

Annual personal and household income data were collected in an open-ended fashion. To assess possession ownership, participants indicated which of 22 household and luxury items they currently owned (modified from Schor 1998), including microwave oven, home computer, cellular phone, stand-alone freezer, swimming pool, cottage, (second) television, and cable television service, from which a summed possessions score was calculated.

## 2.4 Event Sampling Measures and Procedure

For 3 weeks, participants were asked to complete a brief monetary spending form as soon as possible following every purchase of \$5 or more. This dollar limit was set to avoid overburdening participants who made many small, regular transactions. A "transaction" was pre-defined for participants as any occasion in which cash, a check, a credit card, a debit card, or

some other medium was used to pay for any product or service, whether in person or via mail, the Internet, etc. On each form, participants recorded the exact dollar amount of each transaction and briefly indicated the good or service that was purchased or paid for. These open-ended responses were later coded by a rater as “necessity” or “discretionary” purchases using a simple scheme (c.f., Furnham and Argyle 1998; Oropesa 1995; Scitovsky 1992). Necessity purchases were defined as those meeting day-to-day needs for biological survival or used to enhance the likelihood of meeting survival needs particular to North American society (e.g., education). Examples included groceries or food (unless eaten out), clothing (unless accessories), medications, utility or loan payments, mortgage or rent payments, and auto or bus expenses. Discretionary purchases were defined as those made for enjoyment, pleasure, stimulation, or otherwise not required for day-to-day survival in North American society. Examples included wine/beer/soda, meals eaten out, other entertainment, club entry or membership, gifts, and jewelry and accessories. A small percentage (4.6 %) of transactions were uncodable due to lack of information (e.g., “paid bills”); after having removed such transactions from analyses that involved transaction type, the remaining 57 % of transactions were coded as discretionary purchases and 43 % as necessities. We randomly selected 51 % of the subjects’ transactions and had them coded by a second, independent rater. Using the kappa coefficient, the inter-rater reliability of the two, mutually exclusive necessity and discretionary transaction codes was excellent ( $\kappa = .89$ ). Coding differences were resolved by discussion between the raters.

After recording their spending, participants then reported their emotional state “at the time of this purchase” using the 9-item Diener and Emmons (1984) scale of pleasant-unpleasant affect valence. Specifically, participants used a 7-point scale (“not at all” to “extremely”) to report their emotional state on the following adjectives: *happy*, *worried/anxious*, *frustrated*, *pleased*, *angry/hostile*, *enjoyment/fun*, *unhappy*, *depressed/blue* and *joyful*. Individuals were instructed to consider their emotional state immediately following spending, rather than before or during the spending experience. Individuals were also asked to indicate the extent to which their current overall affective state was related to the purchase just made, using a 7-point scale anchored at 0 (“not at all”), 3 (“somewhat”), and 6 (“completely”). The response to this item was used to disentangle ongoing mood effects from the immediate post-spending pleasant and unpleasant affect scores. To this end, marketplace pleasant and unpleasant affect scores were multiplied by this affect specificity measure to assess more clearly the effect of spending itself on affective experience.

Participants also recorded the time lag between each transaction and record completion. The average number of minutes from transaction to form completion was 25.65,  $SD = 148.66$ . Most forms (72.2 %) were completed within 15 min of the transaction. A small percentage (6.5 %) was completed after 60 min; data from these forms were removed from analyses to avoid retrospective biases. This left 1602 forms for analysis ( $M$  per participant = 21.88, range 5–51). Spending (event-sampling) forms were returned each day subsequent to recording in a pre-addressed, stamped envelope.

## 2.5 Overview of Analyses

Multiple regression analyses and multilevel modeling were used to assess the predictive relations between materialism and each dependent variable: past acquisition (possession ownership), present spending, and post-spending pleasant and unpleasant affective state. Multiple regression analyses of the possession ownership and aggregated spending frequency data were done while controlling for the potential effects of financial resources (personal and household income) on ownership and spending frequency. Multilevel

modeling was used to examine the predictive relation between materialism and event-sampled dollar amounts of spending while controlling for the effects of material resources on the materialism—spending amount relation.

Multilevel modeling was also used to examine the predictive relation between materialism and post-spending affective well-being, while controlling for the main effects of material resources, spending type (necessity or discretionary), spending amount, and their interactions with materialism. We tested for both significant main effects of materialism on post-spending affect and whether the associations of materialism with affect were moderated by spending type or spending amount.

Multilevel modeling was conducted using a random coefficient modeling approach (e.g., Bryk and Raudenbush 1992; Kreft and deLeeuw 1998). This approach is well suited to hierarchically nested data structures in which a lower level unit of analysis (level 1; momentary spending and affect reports) is nested within a higher level of analysis (level 2; individual differences in materialism and material resources). Among other advantages (see Reis et al. 2000; Schwartz and Stone 1998), such models are able to incorporate tests of the three primary characteristics that commonly appear in time-series data: linear trend over time, regular cyclicity over intervals of time, and serial autocorrelation (West and Hepworth 1991).

In all multilevel models, the predictor variables were pre-treated to enhance interpretability of the model intercept parameters (Bryk and Raudenbush 1992; Schwartz and Stone 1998). The between-person variables (e.g., materialism, income) were centered around their sample means, whereas other variables that did not include a meaningful zero value in the original scaling (e.g., day of study and time of day) were re-scaled to include zero. The dependent variable data (spending amount and event-sampled affect) were kept in their original temporal form. The SAS MIXED procedure was used to estimate all multilevel models (SAS Institute 1992, 1997).

### 3 Results

Preliminary analyses did not uncover any significant gender or age effects on the outcomes of interest ( $ps > .05$ ), so these variables will not be further considered. Table 1 displays descriptive statistics on materialism and all economic and affect variables. The average MVS materialism score in this sample was similar to reported adult norms (Richins and Dawson 1992). The average personal annual income of the sample was close to the national average for 2001, the year in which data were collected (\$30,527; Bureau of Economic Analysis 2001). The average annual household income of this sample was lower than the national average, which was \$67,856 in 2001 (U.S. Census Bureau 2001), but the income of single persons was included in our calculation of household income to permit analysis of this variable using the entire sample. There was a wide range of both personal and household income. In the event-sampling portion of the study, participants spent an average of almost \$71 per transaction, and as could be expected, there was wide variability in the amount of money spent. Participants made, on average, almost 22 transactions of \$5 or more over the 21-day sampling period. Regarding post-purchase emotional state, participants reported more positive affect than negative affect.



**Table 1** Descriptive statistics for one-occasion and event-sampled economic and psychological variables

Variable	M	SD	Range
<i>Economic characteristics</i>			
Income, annual personal	33,681.39	19,330.10	3000.00–110,000.00
Income, annual household	47,228.23	27,587.44	3000.00–140,000.00
Possessions (sum)	10.30	4.08	1.00–18.00
Spending transaction amount	70.59	63.98	11.52–396.33
Spending transaction frequency (sum)	21.88	10.25	5.00–51.00
<i>Psychological characteristics</i>			
Materialism	49.54	10.25	29.00–72.00
Affect, dispositional			
Pleasant	4.18	1.09	2.00–6.00
Unpleasant	2.76	1.18	0.60–6.00
Affect, event-sampled			
Pleasant	7.47	5.07	0.80–31.93
Unpleasant	1.35	1.63	0.00–8.63

$N = 74$ . Except where noted, economic values represent dollar amounts. Event-sampled pleasant and unpleasant affect scores are weighted by the self-reported relevance of each to the spending experience

### 3.1 Materialism and Spending

We first examined whether materialism was associated with higher levels of material spending, both in terms of past material acquisition—as measured through the accumulation of possessions—and present spending, as measured through frequency and dollar amounts of marketplace purchasing reported via the event-sampling methodology. We also examined whether associations held after controlling for personal/household income when our results showed these variables were also related to spending.

#### 3.1.1 Past Spending

Table 2 displays the inter-correlations between materialism and all economic and affect variables. Materialism was associated with reports of more possession ownership but was not associated with annual personal or household income. However, annual personal income and household income were also positively associated with having more possessions. Multiple regression analyses showed that the relation between materialism and possessions remained significant when annual personal income was controlled ( $\beta = .24$ ,  $p < .05$ ), and when household income was controlled ( $\beta = .27$ ,  $p < .01$ ). In both models, higher personal and household income level also predicted more possession ownership,  $\beta = .37$ ,  $p < .001$  and  $\beta = .52$ ,  $p < .0001$ , respectively. These analyses showed that as their materialism increased, people reported owning more possessions, even after accounting for their income level.<sup>2</sup>

<sup>2</sup> In these and all of the following analyses involving income, similarly significant results were found using natural log-transformed personal and household income. Analyses were also conducted using household income weighted by number of persons in the household; this variable was generally more weakly related to the dependent variables of interest than were the other income variables noted here.



**Table 2** Intercorrelations of materialism, economic, and affect variables

Measure	1	2	3	4	5	6	7	8	9	10	11
1. Materialism	–										
2. Income, personal	.11	–									
3. Income, household	.03	.68****	–								
4. Possessions	.28**	.40****	.53****	–							
<i>Spending, necessity</i>											
5. Amount (mean)	.34**	.47****	.26*	.20 <sup>+</sup>	–						
6. Frequency	–.02	.28*	.14	.07	–.05	–					
<i>Spending, discretionary</i>											
7. Amount (mean)	.06	.27*	.32**	.24*	.24*	.10	–				
8. Frequency	.27*	.53****	.25*	.26*	.06	.39****	.02	–			
<i>Affect, dispositional</i>											
9. Pleasant affect	–.07	.05	.27*	.10	.07	–.10	–.01	–.02	–		
10. Unpleasant affect	.12	–.05	–.09	.04	–.01	–.23*	.18	.00	–.18	–	
<i>Affect, event-sampled</i>											
11. Pleasant affect	.01	–.10	.01	.06	–.07	–.03	–.09	–.05	.34**	–.07	–
12. Unpleasant affect	.25*	–.08	–.04	.05	–.06	–.05	.01	.05	–.03	.38**	.20 <sup>+</sup>

<sup>+</sup>  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; \*\*\*\*  $p < .0001$

### 3.1.2 Day-to-Day Spending

Both materialism and annual income were also bivariate associated with more frequent purchases of a discretionary type over the event-sampling period (see Table 2). Multiple regression showed that the predictive relation between materialism and the frequency of discretionary spending remained significant when annual personal income was controlled ( $\beta = .22, p < .05$ ) and when annual household income was controlled ( $\beta = .27, p < .05$ ). In both models, personal and household income also predicted more frequent discretionary purchases,  $\beta = .50, p < .0001$  and  $\beta = .24, p < .05$ , respectively. No association between materialism and frequency of necessity purchases was found.

Turning to the relations between materialism and amount spent, Table 2 shows that those higher in materialism spent more money on necessity purchases, but not on discretionary purchases, over the 3-week sampling period. Annual income was also associated with higher necessity purchase amounts. To test the predictive relation between materialism and amount of money spent per transaction we constructed separate multilevel models that controlled for the effects of personal and household income. In each model, the following control variables were also included as predictors: purchase type (necessity vs. discretionary) and four time series variables, namely weekly cyclicality in spending amounts (using a sine term),<sup>3</sup> day of study (1–21) and time of day (both included to test for linear trends), and time of momentary report completion (to test for first-order serial autocorrelation in the dependent variable).<sup>4</sup> In accord with the bivariate results noted above, a materialism  $\times$  purchase type interaction term was also included to test whether purchase type moderated the associations between materialism and spending amount.

Results of the first multilevel model analysis, shown in Table 3, revealed that higher materialism, higher personal income, and necessity purchasing each predicted higher levels of spending (all  $ps < .001$ ). This analysis also showed that the effect of materialism on spending amount was moderated by purchase type ( $p < .01$ ); compared to those lower in materialism, those higher in materialism spent more money on necessity goods and services, but not more money on discretionary purchases. Two time series variables were also significant. First, there was serial autocorrelation in spending amounts ( $p < .01$ ), indicating that the dollar amount of money spent in one transaction was correlated with the dollar amount spent in the next transaction. Also, people tended to spend more money earlier in the day,  $p < .01$ . In the second multilevel model, which controlled for the effect of household income, the results were very similar to those presented here.

To summarize, these results support the validity of the materialism construct, as measured with the MVS. After controlling for income levels, and compared to less

<sup>3</sup> The fit of a cosine function was also examined, but a sine function provided a better (though still non-significant) fit. We tested for septurnal, or 7-day weekly cyclicality because a number of social and personality phenomena have been found to follow a weekly cycle (e.g., Brown 2000; Brown and Moskowitz 1998; Larsen and Kasimatis 1991; Reis et al. 2000). In the realm of spending, we expected that full-time working people would tend to have more spending occasions in the time period leading up to and during the weekend than during the majority of the work week. Cyclicality is most commonly tested using either a dummy variable approach or the trigonometric approach used here (Bowerman and O'Connell 1993). Because we were not interested in specific day-of-week effects, we chose the latter approach, which allows for fewer terms in model equations.

<sup>4</sup> A continuous time variable was created, in which the day and time that each record form was completed is used to create a continuous time variable which starts at day 1, record 1, and runs linearly upward to day  $n$ , record  $n$ . For each sampling record, the number of minutes after the pager signal that the form was completed was subtracted from the actual time of record completion to derive the actual time to which each record's data refers. Schwartz and Stone (1998) discuss the incorporation of time into SAS PROC MIXED to test for autocorrelation.

**Table 3** Multi-level model prediction of day-to-day spending amounts by materialism, income, and purchase type

Predictor	Estimate	<i>p</i>
Materialism	1.77	.001
Income (personal)	0.0007	.0001
Spending type	−37.10	.0001
Materialism × spending type	−1.99	.005
Time of day	−11.09	.01
Day of study	0.25	.68
Weekly cyclicality	8.20	.13
Autocorrelation	0.27	.0001

*N* = 74. Spending type was coded as 1 = discretionary purchases; 0 = necessity purchases. Values are unstandardized parameter estimates

materialistically oriented people, more materialistically oriented individuals reported ownership of more possessions, made more marketplace purchases of a discretionary type, and spent more money when purchasing necessity goods and services.

### 3.2 Materialism, Daily Spending, and Affect

The lower part of Table 2 displays the correlations between MVS materialism and both dispositional and event-sampled (spending-related) affect. Failing to replicate past research, materialism was not associated with dispositional pleasant or unpleasant affect. However, materialism predicted significantly higher event-sampled unpleasant affect,  $p < .05$ . That is, more materialistic individuals reported more unpleasant emotional experience at the time of spending. Materialism did not predict pleasant affect at time of spending.

We further examined the association of materialism with unpleasant affect during marketplace activity while testing the role of relevant acquisition variables. Specifically, we tested the main effect of materialism on spending-specific unpleasant affect, as well as the effect that spending type (necessity vs. discretionary) might have on this association. In this multilevel analysis, the effect of the amount of money spent in each transaction was also controlled, because a preliminary multilevel analysis showed that this variable was positively related to unpleasant affect (though not in a correlation analysis using aggregated data—see Table 2). We also tested whether spending amount moderated the relation between materialism and unpleasant affect. Neither personal income ( $p = .33$ ), household income ( $p = .99$ ), possession ownership ( $p = .89$ ), nor the terms representing their interactions with materialism ( $ps > .38$ ) predicted unpleasant affect in preliminary analyses, so these terms were not included in the final model. Finally, four time series variables (weekly cyclicality in unpleasant affect, day of study, time of day, and time of momentary report completion) were also included in the model.

Table 4 presents the results of this multilevel analysis. When higher dollar amounts were spent across transactions, unpleasant affect was higher,  $p < .05$ . Of greater interest to the present investigation, people high in materialism showed higher unpleasant affect at the time of monetary spending ( $p < .05$ ) than did people low in materialism, and this effect was not moderated by type of spending or how much money was spent. This result indicates that materialists' unpleasant emotional experience while spending occurred

**Table 4** Multi-level model prediction of spending-related unpleasant affect by materialism and spending variables

Predictor	Estimate	<i>p</i>
Materialism	0.04	.05
Spending type	−0.10	.42
Materialism × spending type	−0.001	.95
Spending transaction amount	0.001	.04
Time of day	0.13	.12
Day of study	−0.01	.34
Weekly cyclicality	0.23	.01
Autocorrelation	0.77	.0001

*N* = 74. Spending type was coded as 1 = discretionary purchases; 0 = necessity purchases. Values are unstandardized parameter estimates

regardless of whether purchases made were necessary or for pleasure, and regardless of the amount of money spent per transaction<sup>5</sup>.

We also sought to determine whether the relation between materialism and post-spending unpleasant affect was moderated by dispositional unpleasant affect. The results of an analysis in which a materialism × dispositional unpleasant affect term was added to the multilevel model specified in Table 4 showed that the effect of materialism on post-spending unpleasant affect was not limited to those with higher (or lower) levels of dispositional unpleasant affect,  $p > .69$ .

## 4 Discussion

The present study was designed to address two questions of importance to understanding materialism. First, are people high in materialism more likely to spend money in their day-to-day lives than are low materialists? Second, is ongoing spending associated with positive or negative emotional experiences for people high in materialism—that is, with buyer's reward or buyer's letdown?

Regarding the first question, the findings indicated that, compared to people low in materialism, people high in materialism reported ownership of more possessions, made more discretionary purchases, and spent more money on necessity goods and services. These effects were independent of income level; in fact, those higher in materialism did not report higher incomes than those who are less materialistically inclined. These results add to past research that supports the validity of the materialism construct (e.g., Goldberg et al. 2003; Watson 2003), but demonstrate for the first time that materialism can prospectively predict the in vivo spending behavior of people who vary in this values orientation. The present results are also consistent with past research suggesting that materialism is associated with poorer money management skills (Donnelly et al. 2012) and more compulsive

<sup>5</sup> We also examined the possible moderating role of frequency of spending over the 3-week period on the relation between materialism and post-spending unpleasant affect. Using data aggregated over the event-sampling phase of the study, multiple regression analyses on necessity and discretionary spending separately found that frequency of spending did not moderate the effect of materialism (or show a main effect) on spending-related unpleasant affect.

buying (Dittmar et al. 2014); the spending behavior of high materialists in the current study might also explain why they tend to have higher debt levels than those low in materialism (Garðarsdóttir and Dittmar 2012).

Regarding the second question, the results of the present study showed that people high in materialism did not appear to reap well-being dividends from spending. In fact, more materialistic persons reported higher levels of unpleasant emotional experience after spending than did less materialistic individuals; pleasant emotional experience was not involved in these dynamics. If spending is affectively rewarding, this behavior might be expected to offer at least a temporary boost to the well-being of people high in materialism, given that spending and consumption are highly value-congruent activities for such individuals. The current results showed instead that when spending their money on goods and services across a wide price range, including those goods and services ostensibly designed to provide pleasure or enhance quality of experience, high materialists reported more negative affect than did people low in materialism. Importantly, this “buyer’s letdown” effect was not dependent on participants’ dispositional levels of unpleasant affect.

These findings contribute to the literature on the negative associations between materialism and affective states (e.g., Dittmar et al. 2014; Kasser 2002) by showing that such negative associations occur in the marketplace behavior of high materialists. Richins (2013) found that more materialistic college students showed hedonic declines over a period of weeks following a significant purchase; the present research indicates that decrements in hedonic state are evident even in the immediate aftermath of the value-congruent behavior of spending one’s money. These findings are also consistent with research showing that poorer well-being is evident even when materialists: are in environments that support their values (such as in business schools; Jiang et al. in press; Kasser and Ahuvia 2002; Vansteenkiste et al. 2006), make progress towards their materialistic goals (Sheldon and Kasser 1998), and attain their materialistic goals (Niemi et al. 2009). Indeed, in their meta-analytic review of the relation between materialism and well-being, Dittmar et al. (2014) found little or no support for the goal attainment hypothesis that materialism’s negative association to well-being disappears if people succeed in their materialistic goals. Instead, the current results seem more consistent with findings from past studies suggesting that the active pursuit of materialistic goals is inherently unsatisfying, perhaps because materialistic pursuits interfere with the satisfaction of basic psychological needs (Kasser 2002; Otero-López and Villardefrancos 2015; Ryan and Deci 2000; Tsang et al. 2014; see Dittmar et al.’s 2014 meta-analysis for further support of this basic theoretical proposition).

The present results also contribute to the literature on the role of income and other material resources in subjective well-being. Those with higher incomes owned more goods and made more frequent and more expensive purchases than those with lower incomes, which is not inconsistent with standard economic analysis (e.g., Mankiw 2001). However, the current study also found that having more money did not make spending money more enjoyable. An extensive body of research has now established that, within developed countries including the U.S., absolute levels of income have little or no effect on subjective well-being, except among the poor (e.g., Frey and Stutzer 2002). The income-related results of the present paper are generally consistent with this conclusion.

#### 4.1 Limitations and Future Research

Reviews of the scientific literature on materialism (Kasser in press; Richins 2013) and on well-being (Diener et al. 1999; Diener and Biswas-Diener 2002) have called for research

that uses prediction-based designs and that assesses actual spending and consumption behavior. The present research attempted to meet such challenges, but it was subject to certain design limitations that future research might address.

First, the sample size was relatively small, a concern especially pertinent to reaching confident conclusions from the one-occasion data. That said, the current study focused more on event-sampled data, and the high reliability of the repeated-measurement data obtained from this and related methodologies (Csikszentmihalyi and Larson 1987), even with smaller samples, makes the sample size limitation less problematic, particularly given the reasonably lengthy, 3-week sampling period used. The limitation of the small sample is also somewhat ameliorated by the relatively broad socioeconomic range of participants included.

Second, although the sampling period used was relatively long, it was likely shorter than that required to capture some regular monetary transactions that, for many people, occur on a once-monthly basis (e.g., rent, mortgage, or car payments). Because participants in our study began diary recording at different points in a given month, some of these expenditures were likely missed. Although there is no clear reason to believe that this issue adversely affected our ability to test the present study questions, future research on *in vivo* spending behavior may benefit by collecting at least one full month of such data.

Third, the current study relied on personal and household income as material resource indicators, as has other research examining the role of material variables in the relation between materialism and subjective well-being. The significant effects of income in both one-occasion and event-sampling analyses help to justify its long-standing centrality in research on the role of material resources and materialism in subjective well-being (e.g., Diener and Biswas-Diener 2002; Diener et al. 2013). However, more research is needed to examine whether other economic variables (e.g., savings, debt, and net worth) play an important part in the spending and affective consequences of materialism.

Fourth, the current study coded purchases into broad categories of necessity versus discretionary expenditures. This system has ecological validity, and in fact was necessitated by the brief descriptions that our participants typically gave for their purchases. But the brevity of these descriptions may have prevented a clearer picture of spending behavior. For example, “food” was coded as a necessity purchase, but some of these purchases may have been luxury items (e.g., caviar); almost certainly such expenditures varied in quality and quantity. This type of variation may help to explain why materialists in this study spent more money on necessity goods and services. Future research would benefit from more detailed purchase descriptions to examine such issues more closely.

Finally, this study focused on spending behavior, but other behaviors may be particularly relevant for materialism. In particular, future studies could examine differences in how people varying in materialism consume goods and/or services, i.e., how they actually use or experience of products and services purchased (Lebergott 1993). Unfortunately, consumption behaviors are often difficult to isolate in practice. For example, consumption of a car can refer to the driving of it, or to the mere appreciation of its store of value as it sits in one’s driveway, or from the prestige with which it may be associated among one’s friends. Even though consuming is a less easily identifiable behavior compared to spending, *in vivo* reports of actual consumption would extend our understanding of materialism and its consequences.

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