More than meets the eye: The influence of implicit and explicit self-esteem on materialism

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Abstract

Prior research has found a link between self-esteem and materialism. However, these studies examine explicit self-esteem without considering implicit self-esteem. We examine if these two forms of self-esteem jointly influence materialism. Specifically, we propose that discrepancies between implicit and explicit self-esteem are an important driver of materialism. Support for our view is presented in a series of four studies. Study 1 illustrates the link between self-esteem discrepancy and materialism. Studies 2 and 3 show that increases (decreases) in self-esteem discrepancies cause increases (decreases) in materialism. Study 4 confirms the link between self-esteem discrepancy and the desire to self-enhance through material possessions.
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"Somebody said to me, 'But, the Beatles were anti-materialistic.' That's a huge myth. John and I literally used to sit down and say, 'Now, let's write a swimming pool.'" (Paul McCartney)

One of the most fascinating streams of materialism research has focused on identifying what types of individuals are more susceptible to materialism. Over the years, an enduring theme of this research has been the connection between how individuals feel about themselves and materialism. Prior research suggests that individuals with low self-esteem and insecurity are more likely to be materialistic (Braun & Wicklund, 1989; Chang & Arkin, 2002; Chaplin & John, 2007; Kasser, 2002; Richins & Dawson, 1992; Solberg, Diener, & Robinson, 2004).

However, the relationship between self-esteem and materialism may be more complicated than current findings suggest considering that two types of self-esteem exist: explicit and implicit self-esteem. *Explicit self-esteem* is defined as the deliberately and consciously reasoned evaluations of the self, whereas *implicit self-esteem* is defined as highly efficient evaluations of the self occurring spontaneously and outside of awareness or control (Greenwald & Banaji, 1995; Koole, Dijksterhuis, & Knippenberg, 2001). Researchers have confirmed that explicit and implicit self-esteem are distinct dimensions of self-esteem (Bosson, Swann, & Pennebaker, 2000; Dijksterhuis, 2004; Spalding & Hardin, 1999).

To date, materialism research has been limited to examining the role that explicit self-esteem plays in materialism. These studies have relied on paper and pencil tests asking participants to self-report their levels of self-esteem. Implicit self-esteem is assessed using less direct measures (Greenwald & Banaji, 1995; Kitayama & Rarasawa, 1997), and discrepancies can exist between levels of implicit and explicit self-esteem. For example, consider individuals who are characterized as having high explicit self-esteem by agreeing with survey items such as,

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"On the whole, I am satisfied with myself." For some of these individuals, their positive views are also held at a less conscious level, whereas for others, explicit expressions of high self-esteem in response to survey questions actually mask negative self-views held at a more unconscious level. Prior research, focusing only on explicit self-esteem, does not capture these subtleties, nor does it address the issue of discrepancies between explicit and implicit self-esteem and how these discrepancies might relate to materialism.

In fact, discrepancies between explicit and implicit self-esteem may be more predictive of materialistic orientations than explicit self-esteem alone. Past research has found that individuals with discrepant self-esteem engage in attempts to deal with psychological discomfort associated with the discrepancy, including various forms of self-enhancement (e.g., Bosson, Brown, Zeigler-Hill, & Swann, 2003; Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003; Zeigler-Hill & Terry, 2007). Although self-enhancement can take many forms, a focus on material goods is an important way that consumers attempt to build and communicate a more positive self-image (Belk, 1988; Escalas & Bettman, 2003; Solomon, 1983), suggesting a link between self-esteem discrepancies and materialism.

In this article, we examine the proposition that larger discrepancies between explicit and implicit self-esteem lead to greater expressions of materialism. Note that this perspective gives rise to a set of predictions that differ from prior materialism findings. For example, individuals with high explicit self-esteem have been generally viewed as less materialistic than those with low explicit self-esteem. However, if an individual with high explicit self-esteem has low implicit self-esteem (discrepant self-esteem), we predict this individual will be more materialistic than someone with low explicit self-esteem and low implicit self-esteem (congruent self-esteem).

We examine these propositions in four studies. In Study 1, we measure intact levels of explicit and implicit self-esteem, and demonstrate that larger discrepancies between explicit and implicit self-esteem are *associated* with higher levels of materialism. Next, we present two studies using different experimental approaches to manipulate levels of self-esteem discrepancy, which provide evidence that larger (smaller) discrepancies in self-esteem *cause* higher (lower) levels of materialism. And, in a final study, we provide evidence for the link between self-esteem discrepancies and self-enhancement through material goods in the context of an advertising study, showing that consumers with larger self-esteem discrepancies favor a product that is advertised in a way that facilitates self-enhancement.

Our findings contribute to materialism research in several ways. First, we bring current perspectives on self-esteem into the materialism literature. Most current research in self-esteem has emphasized the role of implicit self-evaluative processes (Brinol, Petty, & Wheeler, 2006; Dijksterhuis, 2004), yet materialism research has focused only on explicit self-esteem. Second, we provide a more nuanced view of how self-esteem influences materialism by showing that discrepancies in explicit

and implicit self-esteem predict materialism better than explicit self-esteem alone. Individuals with high or low explicit self-esteem are not a homogeneous group, and as a result, high (low) explicit self-esteem individuals are not necessarily less (more) materialistic. Third, we manipulate levels of self-esteem discrepancy, allowing us to pin down a causal relationship between self-esteem discrepancy and materialism. Prior research has relied on correlations between self-esteem and materialism to make the case that self-esteem is an important driver of materialism. We add to this line of inquiry by not only incorporating implicit self-esteem into the conversation, but also providing stronger evidence for the causal role that self-esteem plays in materialistic values.

Conceptual overview

Implicit versus explicit self-esteem

Self-views originate not only from conscious, but also from automatic evaluations of the self. Different evaluative processes give rise to two types of self-esteem: explicit and implicit self-esteem. Explicit self-esteem refers to consciously reasoned evaluations of the self, whereas implicit self-esteem is defined as highly efficient evaluations of the self occurring outside of awareness (Greenwald & Banaji, 1995; Koole et al., 2001; Wilson, Lindsey, & Schooler, 2000).

How do these types of self-esteem coexist? The dual attitude model of Wilson et al. (2000) provides a framework for understanding how implicit and explicit self-esteem coexist, and how they are retrieved from memory. They explain that people can have different evaluations of the same attitude object—one at an explicit level, and one at an implicit level. Such dual attitudes typically develop through the processes of attitude change. Newly formed attitudes are accessible at an explicit level, whereas the older, more habitual attitudes may exist in memory, more likely at an implicit level. When dual attitudes exist, retrieving an explicit attitude from memory requires cognitive capacity and motivation, whereas an implicit attitude is activated automatically. With regard to self-esteem, implicit self-esteem is habitual and automatic, presumably dominating self-evaluations when cognitive capacity and motivation are not sufficient. Indeed, it has been shown that individuals with depleted cognitive capacity report explicit self-esteem corresponding more closely to levels of implicit self-esteem than do individuals with intact cognitive capacity (Koole et al., 2001).

Research supports the existence of explicit and implicit self-esteem as distinct attitudes about the self. First, the correlation between measures of explicit and implicit self-esteem is small at best (Bosson et al., 2000; Greenwald & Farnham, 2000; Jordan, Spencer, & Zanna, 2003). Second, implicit and explicit self-esteem predict different behavioral tendencies (Dijksterhuis, 2004; Greenwald & Farnham, 2000; Jordan, Spencer, & Zanna, 2003; Rudman, Dohn, & Fairchild, 2007; Spalding & Hardin, 1999). For example, Spalding and Hardin (1999) found that during personal interviews, implicit self-esteem predicted nonverbal anxiety (unconsciously controlled anxiety), whereas explicit self-esteem predicted self-

handicapping and self-reported anxiety (consciously controlled anxiety). Third, implicit self-esteem is not just an unbiased measure of explicit self-esteem. If that were true, individuals with high explicit but low implicit self-esteem would score higher in impression management than individuals with high explicit and high implicit self-esteem, which is not the case (Jordan, Spencer, & Zanna, 2003; Spencer, Jordan, Logel, & Zanna, 2005). Further, if implicit self-esteem is true self-esteem, individuals with low implicit self-esteem should behave in a similar manner, regardless of whether they have high or low explicit self-esteem, which has not proven to be the case. Individuals with low implicit but high explicit self-esteem show more defensive behavioral patterns, including narcissistic tendencies and dissonance reduction, than do individuals with low implicit and low explicit self-esteem (Jordan, Spencer, & Zanna, 2003).

Discrepancies between implicit and explicit self-esteem

Because implicit and explicit self-esteem are distinct and arise from different evaluative processes, they may or may not be consistent with each other. Discrepancies can take two different forms: high explicit but low implicit self-esteem *or* low explicit but high implicit self-esteem. Individuals with high explicit but low implicit self-esteem are outwardly confident and satisfied with who they are, but harbor nagging doubts about their self-worth at a less conscious level (Spencer et al., 2005). Individuals with low explicit but high implicit self-esteem express less confidence and less satisfaction with who they are, but may have held themselves in high regard at some time in the past, and this self-evaluation still remains at a less conscious level (Jordan, Spencer, Zanna, Hoshino-Browne, et al., 2003; Spencer et al., 2005). Discrepancies in self-esteem, in either direction, can result in a number of negative psychological outcomes, such as anxiety (Shedler, Mayman, & Manis, 1993), anger suppression, nervousness, depression (Schroder-Abe, Rudolph, & Schutz, 2007), and implicit self-doubt (Brinol, Petty, & Wheeler, 2003, cited in Brinol et al., 2006).

To deal with this psychological discomfort, individuals exhibit a variety of behaviors intended to enhance judgments about the self (Bosson et al., 2003; Brinol et al., 2006; Kernis et al., 2005; Petty & Brinol, 2009; Spencer et al., 2005). For example, individuals with high explicit/low implicit self-esteem exhibit higher levels of narcissism (Jordan, Spencer, Zanna, Hoshino-Browne, et al., 2003; Zeigler-Hill, 2006) and greater in-group biases (Jordan, Spencer, Zanna, Hoshino-Browne et al., 2003) than individuals with high explicit/high implicit self-esteem. Although some empirical work reveals more apparent patterns among people with high explicit/low implicit self-esteem than those with low explicit/high implicit self-esteem discrepancies, a number of researchers find that people with self-esteem discrepancies, in either direction, are equally motivated to resolve psychological discomfort associated with the self. Both types of self-esteem discrepancy motivate individuals to seek out and gather self-relevant information (Brinol et al., 2006). Moreover, individuals with discrepant self-esteem in either direction (high explicit/low implicit *or* low explicit/high implicit self-esteem) exaggerate self-views by

perceiving a highly flattering personality profile as more self-descriptive than do individuals with congruent self-esteem (Bosson et al., 2003; Zeigler-Hill & Terry, 2007). Further, in a meta-analysis of studies examining different self-enhancing strategies—such as narcissism, in-group biases, dissonance reduction, and self-deception—Jordan and his colleagues find that these strategies occur in individuals with both types of self-esteem discrepancies (Jordan, Spencer, Zanna, Hoshino-Browne, et al., 2003, p. 976). In sum, self-enhancement and self-elaboration behaviors are common among individuals who experience discrepancies between implicit and explicit self-esteem.

Self-esteem discrepancies and materialism

Materialism has been defined as "the importance a person places on possessions and their acquisition as a necessary or desirable form of conduct to reach desired end states" (Richins & Dawson, 1992, p. 307). Research conducted across a variety of disciplines—including psychology, sociology, and marketing—finds that many of the reasons for valuing possessions are related to identifying and maintaining self-concept and enhancing self-value (Belk, 1985; Holman, 1981; Kasser, 2002; Mukerji, 1983).

Prior materialism researchers view material goods as an instrument for individuals to cope with or compensate for low self-value, which renders these individuals more susceptible to materialism (Braun & Wicklund, 1989; Chang & Arkin, 2002; Chaplin & John, 2007; Kasser, 2002; Richins & Dawson, 1992; Solberg et al., 2004). Experimental evidence shows that inducing negative self-feelings increases materialism (Braun & Wicklund, 1989; Chang & Arkin, 2002), whereas inducing positive self-feelings decreases materialism (Chaplin & John, 2007). To date, these investigations have focused on explicit evaluations of the self, with surveys that measure only explicit self-esteem and experiments that manipulate self-feelings by explicitly asking participants to think about either positive or negative aspects of the self.

We suggest that both implicit as well as explicit evaluations of the self drive materialism. Our perspective adds to existing materialism research by suggesting that a focus on material possessions can originate at a much deeper level. Although the empirical work on materialism focuses on explicit self-feelings, materialism researchers have suggested that less conscious forces may also be at work. For example, Kasser and Kasser (2001) analyzed the dreams for individuals high versus low in materialism, and found that the most impactful dreams of those high in materialism were related to insecurity and anxiety (e.g., falling and death) and concerns with self-esteem or competence. These findings suggest that not just conscious negative feelings but deeper insecurity or concerns about the self are linked to materialism (Kasser, 2002).

We propose that the discrepancy between implicit and explicit self-esteem, which causes psychological discomfort, is consequential in the adaptation of materialistic values. Consumers use material possessions as an important way to self-enhance. Individuals with discrepant self-esteem engage in self-

enhancement as a way to deal with the negative consequences (e.g., anxiety or implicit self-doubt) which accompany discrepant self-esteem. Note that because negative psychological consequences can accompany different types of self-esteem discrepancy, either high explicit/low implicit *or* low explicit/ high implicit, we predict that self-esteem discrepancies in either direction are related to higher levels of materialism. To be more precise, we predict that individuals with larger self-esteem discrepancies, in either direction, will be more materialistic than individuals with smaller self-esteem discrepancies.

Overview of empirical studies

We present four studies. In Study 1, we measure intact levels of explicit and implicit self-esteem, and demonstrate that larger discrepancies between explicit and implicit self-esteem are *associated* with higher levels of materialism. Next, we extend this finding in two studies where we manipulate levels of discrepancy between implicit and explicit self-esteem, allowing us to examine whether larger self-esteem discrepancies *cause* higher levels of materialism. In Study 2, we prime high implicit self-esteem, which has the effect of increasing self-esteem discrepancy for individuals with low explicit self-esteem, but decreasing self-esteem discrepancy for individuals with high explicit self-esteem. We find that increasing (decreasing) self-esteem discrepancy leads to higher (lower) materialism. In Study 3, we manipulate cognitive load to decrease the cognitive resources available for experiencing self-esteem discrepancy, which results in lower levels of materialism. We obtain this finding for individuals with both types of self-esteem discrepancy (high explicit/low implicit and low explicit/high implicit self-esteem). Taken together, these three studies provide converging evidence that self-esteem discrepancies play an important role in furthering materialism.

In a final study, we shift focus to examine our rationale for predicting a link between self-esteem discrepancy and materialism. Based on prior research showing that individuals with self-esteem discrepancies engage in various forms of self-enhancement, we reasoned that these individuals could also self-enhance by focusing on material possessions. In Study 4, we provide evidence for this line of thinking by showing that individuals with larger self-esteem discrepancies prefer products with self-enhancing benefits that are more easily linked to the self. Consumers were shown an ad for a luxury product with self-enhancing benefits that were easily linked to the self (high self-referencing ad), versus not so easily linked to the self (low self-referencing ad). Consistent with our thinking, we find that consumers with larger self-esteem discrepancies have more favorable attitudes toward the product when it is more easily related to the self, which facilitates self-enhancement.

Study 1

Sample and procedure

Ninety-six undergraduate students participated in this study. As they arrived, the participants were seated in individual cubicles with dividers, thus ensuring the privacy of each person's responses. Each cubicle contained a computer, which was used for the implicit self-esteem measurement procedure. Participants were told that we were interested in their feelings about themselves and their lives. After this brief description, respondents completed measures of explicit self-esteem, implicit self-esteem, and materialism, separated by filler questions that provided a buffer between measures. Additionally, a measure of socially desirable responding was included to serve as a control factor in subsequent analyses. Respondents were then questioned about the purpose of the study and were debriefed. None of the participants was able to identify the study's hypotheses. In total, the study took approximately 40 min to complete.

Measures

Self-esteem

Explicit self-esteem was measured using a self-report rating scale, the Rosenberg Self-Esteem Scale (RSES: Rosenberg, 1965). Respondents were asked to agree or disagree with 10 statements, such as "On the whole, I am satisfied with myself" (see Table 1).

Implicit self-esteem was measured using the self-esteem Implicit Association Test (IAT) (Greenwald & Farnham, 2000). Several methods for measuring implicit self-esteem exist, including the IAT, name letter preferences, and implicit self-evaluation surveys. We chose the self-esteem IAT because it has been shown to have superior test–retest reliability and predictive validity relative to other implicit measures of self-esteem (Bosson et al., 2000).

The computerized self-esteem IAT involves seven blocks, consisting of five practice blocks and two test blocks (see Fig. 1). For each block, participants pressed a left or right key (D or L) to categorize, as quickly and as accurately as possible, words that appeared in the middle of a computer screen. Blocks 1, 2, and 5 were practice blocks in which the participants categorized words in terms of: (a) *self* versus *other* categories; or (b) *pleasant* versus *unpleasant* categories. Blocks 3 and 6 served as practice for Blocks 4 and 7. In Blocks 3 and 4, the participants used one response key to indicate whether a word belonged to the self or *pleasant* categories versus the other or *unpleasant* categories. In Blocks 6 and 7, the participants used one response key to indicate whether a word belonged to the self or *unpleasant* categories versus the other or *pleasant* categories. Words were randomly presented within blocks.

The self-esteem IAT is based on the logic that individuals with high implicit self-esteem associate the self with positive affect automatically, and therefore, respond faster when the self and pleasant are paired (Blocks 3 and 4) than when the self and unpleasant are paired (Blocks 6 and 7). We thus computed IAT scores by dividing the differences between the average response latencies of Blocks 3 and 4, and those of Blocks 6 and 7, by the standard deviation of all latencies in the blocks (D measure: Greenwald, Nosek, & Banaji, 2003). We deleted responses with latencies over 10,000 ms

Table 1
Rating scale measures.

Measure	Scale	Number of items	Examples	Response scale	Reliability (coefficient α)
Explicit self-esteem	Rosenberg (1965)	10	"On the whole, I am satisfied with myself." "I feel that I have a number of good qualities."	7 = strongly agree 1 = strongly disagree	Study 1 = .89 Study 2 = .88 Study 3 = .92 Study 4 = .92
Attitude toward the product		5	"Unappealing–Appealing" "Undesirable–Desirable" "Inferior–Superior" "Likely to be of poor quality–Likely to be of good quality" "Extremely poorly designed–Extremely well designed"	1–7 point	Study 4 = .90
SDR	Marlowe–Crowne's Social Desirability Scale	13	"I am always courteous, even to people who are disagreeable." "I have never deliberately said something that hurt someone's feelings."	True/false	Study 1 = .77 Study 2 = .74 Study 3 = .75 Study 4 = .78

in order to control for the influence of outliers, but did not exclude errors, since the inclusion of error latencies enhance IAT effects (Greenwald et al., 2003).

Fig. 1. Computer display of self-esteem IAT.

Materialism

We measured materialism with a collage technique used in past materialism research (Chaplin & John, 2007). The collage task allows one to measure materialism in an indirect manner, without using direct questions that can elevate social desirability bias (Mick, 1996). Further, the collage task assesses an individual's focus on material possessions in the context of other activities, accomplishments, and personal relationships that also serve as instruments for happiness, success, or personal well-being.

Participants were asked to construct a collage to answer the question: "What makes me happy?" They were shown a set of items available for composing their collages, generated from prior research on happiness (Chaplin & John, 2007; Diener, 1995). The items represented four themes: 1) activities/hobbies; 2) people; 3) material things; and 4) achievements. For example, "watching sports" and "listening to music" were items in the activities/hobbies category; "boyfriend/girlfriend" and "roommates" were items in the people category; "nice car" and "credit cards" were in the material things category; and "getting good grades" and "making my parents proud" were items in the achievement category. Items in the material things category were pre-tested to ensure they were perceived in this way by respondents.

Participants constructed their happiness collage in two stages. First, they chose as many items as they wished and placed them on a poster board covered with repositionable adhesive, which made it easy to add or remove items. Second, they were asked to discard half the items on their collages, leaving only those that were most important to their happiness. This procedure encouraged participants to think more carefully about what items really made them happy. Photographs of the reduced collage were taken for analysis, and the number of items in the "material things" category was counted to constitute the measure of materialism.[2] Thus,

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[2] We also measured the relative presence of material things on a collage, computed as the ratio of the number of material things on the collage divided by the total number of things on the collage. This measure was highly correlated with the collage measure we report, $r = .92$, $p < .001$.

Fig. 2. Happiness collage example.

individuals who chose more (less) material goods for their collages were considered to be more (less) materialistic (see Fig. 2 for a collage example).

The collage measure was pilot tested with undergraduate students ($N=57$). In addition to testing procedural aspects of the task, we collected data to evaluate the collage measure's validity. First, we examined convergent validity by assessing the correlation between the collage measure and the most widely used rating scale for materialism, Richins and Dawson's (1992) Material Values Scale (MLS). This rating scale assesses materialism by asking individuals to agree or disagree with statements such as, "I like to own things that impress people." As expected, the collage measure and MLS were significantly correlated, $r=.57$, $p<.001$. Second, we examined nomological validity by assessing the correlation between the collage measure and the Satisfaction With Life Scale (SWLS: Diener, Emmons, Larsen, & Griffin, 1985), which asks individuals to agree or disagree with statements such as, "I am satisfied with my life." One of the

consequences of materialism is a lower satisfaction with one's life, and as expected, we found the collage materialism measure was negatively related to the SWLS, $r=-.52$, $p<.001$. Finally, we examined whether the collage measure was contaminated by socially desirable responding (SDR), using the SDR measure described below. As expected, the materialism collage measure did not show evidence of SDR, $r=-.17$, $p>.20$.

Socially desirable responding (SDR)

Due to concerns regarding socially desirable responding in materialism research (Mick, 1996), we included a measure of SDR as a control factor in our analyses. SDR was measured using the reduced form of Marlowe–Crowne's Social Desirability scale (Reynolds, 1982), which asks participants to agree or disagree with statements such as "I am always courteous, even to people who are disagreeable" (see Table 1).

Results

Measure validation

Reliability analyses indicated that the rating scales measuring explicit self-esteem and SDR attained acceptable levels of reliability (see Table 1). For implicit self-esteem, we evaluated the discriminant validity of the IAT measure to ensure that there was little overlap between the measures of implicit self-esteem and explicit self-esteem. As expected, implicit self-esteem was not significantly correlated with explicit self-esteem, $r = -.06$, $p > .50$.

Hypothesis tests

We conducted a hierarchical regression analysis to test our prediction that individuals with a large discrepancy between explicit and implicit self-esteem are more materialistic than individuals with a small discrepancy. The analysis included the collage materialism measure as the dependent measure, with the RSES score (explicit self-esteem: continuous variable) and the IAT score (implicit self-esteem: continuous variable) as the independent variables. Support for our prediction was expected to surface in the form of an interaction between explicit self-esteem and implicit self-esteem. Scores for the RSES (explicit self-esteem) and the IAT (implicit self-esteem) were centered by subtracting the mean from each person's score to eliminate multicollinearity (Aiken & West, 1991). Main effects were interpreted in the first step of the regression; a two-way interaction was examined in the second step (Cohen & Cohen, 1983).

The results indicated that the interaction between the RSES and IAT was significant, $\beta = -3.66$, $t(92) = 2.40$, $p < .05$; overall $\Delta R^2 = .06$, F-change $p < .05$, revealing a joint influence of explicit and implicit self-esteem on materialism. There were no significant main effects for explicit self-esteem, $\beta = -.37$, $t(93) < 1$, NS, or implicit self-esteem, $\beta = -.15$, $t(93) < 1$, NS; overall $R^2 = .01$. This effect is illustrated in Fig. 3, which is plotted at one standard deviation below and above the mean of the RSES and IAT scores (Cohen & Cohen, 1983). To explore this interaction in more detail, we tested simple slopes at values one standard deviation above and below the mean of explicit self-esteem (Aiken & West, 1991; Cohen & Cohen, 1983). As Fig. 3 shows, there was a significant negative relationship between the IAT and materialism scores for participants with high explicit self-esteem (+1SD), $\beta = -2.96$, $t(92) = 1.82$, $p < .05$. In contrast, among participants with low explicit self-esteem (−1SD), the relationship between implicit self-esteem and materialism scores was significantly positive, $\beta = 2.81$; $t(92) = 1.68$, $p < .05$. Thus, participants with large self-esteem discrepancies showed more materialistic tendencies than participants with small self-esteem discrepancies, regardless of whether the discrepancy emerged from explicit > implicit self-esteem or implicit > explicit self-esteem. Further, there were no substantive differences in results when controlling for SDR in the analysis.

Discussion

How do these results compare to prior research findings? Prior work has focused on the relationship between materialism and explicit self-esteem, whereas we focus on the relationship
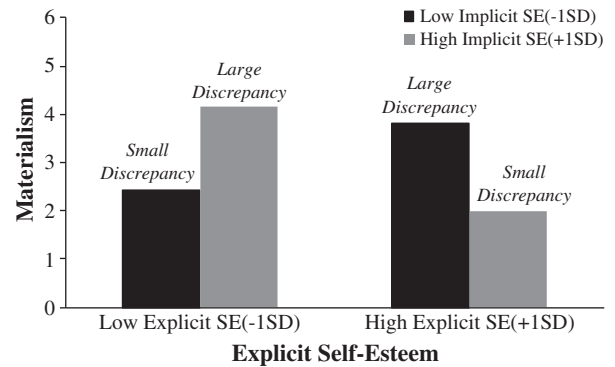

Fig. 3. Study 1: Materialism as a function of explicit and implicit self-esteem.

between materialism and discrepancies between explicit and implicit self-esteem. Our results support the idea that materialism depends on levels of implicit as well as explicit self-esteem; individuals with a large discrepancy between explicit and implicit self-esteem, in either direction, are more materialistic than those with a small discrepancy. In other words, discrepancies in self-esteem better predict materialism than explicit self-esteem alone. For example, we find that individuals with high explicit self-esteem are not necessarily less materialistic—those with high implicit self-esteem exhibit a low level of materialism, but individuals with low implicit self-esteem exhibit high levels of materialism.

In the next study, we strengthen our findings by examining the causal relationship between self-esteem discrepancy and materialism. In Study 1, self-esteem discrepancy was assessed by measuring intact levels of explicit and implicit self-esteem, consistent with prior research. However, because self-esteem discrepancy is a measured variable, it is possible that the relationship between self-esteem discrepancy and materialism is driven by an unspecified third variable correlated with self-esteem discrepancy. In Study 2, we address this issue by manipulating levels of self-esteem discrepancy. To do so, we use an experimental manipulation to prime high implicit self-esteem, which has the effect of increasing discrepancies for individuals with low explicit self-esteem but decreasing discrepancies for individuals with high explicit self-esteem. If discrepancies between explicit and implicit self-esteem drive materialism, then our prime should increase materialistic tendencies for individuals with low explicit self-esteem (large discrepancy) but decrease materialistic tendencies for individuals with high explicit self-esteem (small discrepancy). Thus, we predict that when high implicit self-esteem is primed, individuals with high explicit self-esteem (*small discrepancy*) will be less materialistic than will individuals with low explicit self-esteem (*large discrepancy*).

Study 2

Sample and procedures

Forty-four undergraduate students participated in this study: 23 in the high implicit self-esteem priming condition and 21 in

the control condition. Upon arrival, participants were seated in individual cubicles equipped with dividers and a computer. Procedures and measures were identical to Study 1, except that the high implicit self-esteem prime was inserted between the explicit and implicit self-esteem measures for the priming condition. Given this ordering, the implicit self-esteem measure served as a manipulation check for the prime. After completing the study, participants were questioned about the purpose of the study and debriefed. None of the respondents identified the study hypotheses. The study took about 40 min to complete.

High implicit self-esteem prime

We used a method devised by Dijksterhuis (2004), who showed that high implicit self-esteem can be enhanced by subliminal presentation of the word "I" with positive traits, within the context of a lexical decision task. In our study, participants were asked to decide, as quickly as possible, whether a target word presented on a computer screen was a real word, recording their decision by pressing one of two keys. As soon as participants pressed a key, the target disappeared. After a one-second delay, the next trial started. Fifteen positive trait words (e.g., warm, nice, sincere) and 15 random letter strings served as targets for the lexical decision tasks. Each trial started with a row of X's presented in the center of the computer screen for 500 ms. In the high implicit self-esteem priming condition, subliminal presentation of the word "I" (for 17 ms) was immediately followed by a positive trait word. In the control condition, subliminal presentation of the letter "X" (for 17 ms) was immediately followed by a positive trait word. All words (and rows of X's) were presented in black on a white computer screen (see Fig. 4).

Although this task has been used to prime high implicit self-esteem successfully in other contexts, we conducted a pretest to ensure that the prime did not inadvertently enhance explicit self-esteem as well. Thirty-seven students participated in the pretest: 19 in the priming condition, 18 in the control condition. After administering the lexical decision task to manipulate high

implicit self-esteem, we measured explicit self-esteem for the priming and control groups. As expected, levels of explicit self-esteem were not affected by the high implicit self-esteem prime, M_{prime}=5.55 vs. $M_{control}$=5.87, $t(1, 35)$=1.35, $p>.15$.

Results

Manipulation check

To assess whether the high implicit self-esteem prime was successful, we compared the IAT implicit self-esteem measures for the priming versus control conditions. The implicit self-esteem score was higher in the high implicit self-esteem priming condition than in the control condition, M_{prime}=.63 vs. $M_{control}$=.48, $t(1, 42)$=2.03, $p<.05$. Thus, the high implicit self-esteem prime manipulation was deemed successful.

Measure validation

Reliability analyses indicated that the rating scales measuring explicit self-esteem and SDR attained acceptable levels of reliability (see Table 1).

Hypothesis tests

We conducted a hierarchical regression analysis to examine the effect of the high implicit self-esteem prime on materialistic tendencies among individuals with high versus low explicit self-esteem. Recall that increasing implicit self-esteem was expected to increase materialism for individuals with low explicit self-esteem (large self-esteem discrepancy) but to decrease materialism for individuals with high explicit self-esteem (small self-esteem discrepancy). To capture this effect in our analysis, we included the collage materialism measure as the dependent measure, with the RSES score (explicit self-esteem: continuous variable) and the experimental condition (implicit self-esteem prime versus control; dummy coded) as independent variables. Support for our prediction was expected to surface in the form of the interaction between explicit self-esteem and experimental condition. To eliminate multicollinearity, explicit self-esteem scores were centered by subtracting the mean from each
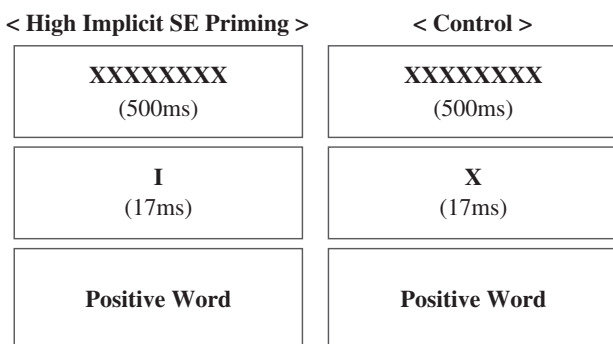

Fig. 4. Computer display of high implicit self-esteem priming.
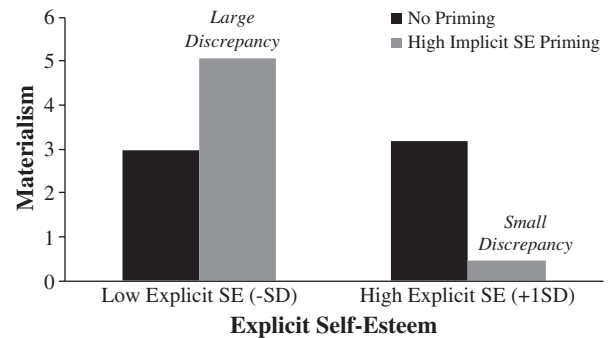

Fig. 5. Study 2: Materialism as a function of discrepancy between explicit self-esteem and primed high implicit self-esteem.

person's score (Aiken & West, 1991). Main effects were interpreted in the first step of the regression, and a two-way interaction was identified in the second step (Cohen & Cohen, 1983).

The results indicated a significant main effect for explicit self-esteem, $\beta=-1.77$, $t(41)=2.60$, $p<.05$, but not experimental condition, $\beta=-.35$, $t(41)<1$, NS; overall $R^2=.14$. Consistent with prior research, lower levels of explicit self-esteem were associated with higher levels of materialism. Critical to our primary concern, the two-way interaction between explicit self-esteem and the experimental condition was significant, $\beta=-3.44$, $t(40)=2.70$, $p<.05$; $\Delta R^2=.13$; F-change $p<.05$, as shown in Fig. 5. To explore this interaction in more detail, we tested the simple slopes within each experimental condition (West, Aiken, & Krull, 1996). Simple slope tests revealed that, in the high implicit self-esteem priming condition, there was a significant negative relationship between explicit self-esteem and materialism, $\beta=-3.28$, $t(40)=3.88$, $p<.001$. As predicted, high explicit self-esteem participants in the high implicit self-esteem priming condition (small discrepancy) were less materialistic than low explicit self-esteem participants in the priming condition (large discrepancy). Such a difference was not found in the control condition, $\beta=.17$, $t(40)<1$, NS. Further, we found no substantive differences in the results when controlling for SDR in the analysis.

Discussion

Our results provide further support for the proposition that larger discrepancies between explicit and implicit self-esteem lead to higher levels of materialism. To show this, we manipulated levels of discrepancy by priming high implicit self-esteem subliminally. Participants who experienced a smaller discrepancy (high explicit self-esteem people in the priming condition) were less materialistic than participants who experienced a larger discrepancy (low explicit self-esteem people in the priming condition). These results replicate those reported in Study 1. Across studies, we find that individuals with a larger discrepancy between explicit and implicit self-esteem are more materialistic.

However, in Study 2, we were able to manipulate self-esteem discrepancy in one direction only. By priming high implicit self-esteem, we examined materialism among individuals with high explicit and *high* implicit self-esteem (small discrepancy) versus individuals with low explicit and *high* implicit self-esteem (large discrepancy). We did not prime low implicit self-esteem, which would have allowed us to examine materialism among individuals with low explicit and *low* implicit self-esteem (small discrepancy) versus individuals with high explicit but *low* implicit self-esteem (large discrepancy), due to ethical concerns.

In Study 3, we manipulate discrepancies in explicit versus implicit self-esteem using a different method, which allows us to examine self-esteem discrepancies in both directions. Prior research has found that when cognitive capacity is depleted, the discrepancy between explicit and implicit self-esteem tends to decrease (Koole et al., 2001). As we discussed earlier, retrieving explicit self-esteem from memory requires cognitive capacity and motivation, whereas implicit self-esteem is activated automatically (Wilson et al., 2000). When individuals lack cognitive resources to retrieve explicit self-esteem, implicit self-evaluations, which are automatically activated, predominate in their explicit self-evaluations, reducing the levels of discrepancy between explicit and implicit self-esteem (Koole et al., 2001). If discrepancies between explicit and implicit self-esteem are responsible for materialistic tendencies, a manipulation that depletes cognitive capacity should reduce resources available to experience self-esteem discrepancy, which should decrease materialistic tendencies. Thus, we predict that individuals with a larger discrepancy between explicit and implicit self-esteem will be less materialistic in the high cognitive load condition than in the control condition. In contrast, individuals with a smaller discrepancy between explicit and implicit self-esteem will be unaffected by cognitive load.

Study 3

Sample and procedures

One-hundred-and-thirty-seven undergraduate students participated in the study: 66 in the high cognitive load condition and 71 in the control condition. Students were seated in individual cubicles equipped with dividers and a computer. Participants first completed measures of explicit self-esteem and implicit self-esteem. Next, participants completed a set of filler questions as a buffer before completing the happiness collage. Then, participants completed the happiness collage, with those in the high cognitive load condition doing so while they were asked to hold an eight-digit number in memory as they constructed their collage. This memory task has been found to deplete cognitive resources in prior research (Gilbert & Hixon, 1991). Finally, participants completed a few additional questions, including a measure of SDR. After completing the study, participants were questioned about the purpose of the study and debriefed. None of the respondents identified the study hypotheses. The study took about 40 min to complete.

Results

Measure validation

Reliability analyses indicated that the rating scales measuring explicit self-esteem and SDR attained acceptable levels of reliability (see Table 1). For implicit self-esteem, we evaluated the discriminant validity of the IAT measure, which confirmed that implicit self-esteem was not significantly correlated with explicit self-esteem, $r=.13$, $p>.13$.

Hypothesis tests

We conducted a hierarchical regression analysis to examine the effect of self-esteem discrepancy on materialism. Following the procedure used in prior studies, we included the collage materialism measure as the dependent variable, with the RSES

score (explicit self-esteem: continuous variable), the IAT score (implicit self-esteem: continuous variable), and experimental condition (high cognitive load versus control; dummy coded) as independent variables. Scores for the RSES (explicit self-esteem) and the IAT (implicit self-esteem) were centered by subtracting the mean from each person's score to eliminate multicollinearity (Aiken & West, 1991). Main effects were interpreted in the first step of the regression, two-way interactions in the second step, and the three-way interaction in the third step (Cohen & Cohen, 1983).

The results indicated a significant main effect for experimental condition, revealing that materialistic tendencies were lower in the high cognitive load versus control condition, $\beta=-1.48$, $t(133)=2.26$, $p<.05$. The main effects for explicit self-esteem, $\beta=.04$, $t(133)<1$, NS, and implicit self-esteem, $\beta=.35$, $t(133)<1$, NS, overall $R^2=.04$, were not significant, nor was the two-way interaction between RSES and IAT, $\beta=-1.19$, $t(130)<1$, NS, $\Delta R^2=.01$, F-change $p>.74$. Critical to our primary concern, the three-way interaction between RSES, IAT, and experimental condition was significant, $\beta=6.57$, $t(129)=2.74$, $p<.01$, $\Delta R^2=.05$, F-

change $p<.01$. This effect is illustrated in Fig. 6, plotted at one standard deviation below and above the mean of the RSES and IAT scores (Cohen & Cohen, 1983). As shown in the figure, the joint influence of explicit and implicit self-esteem on materialism was found in the control condition, $\beta=-4.96$, $t(129)=2.73$, $p<.01$, replicating Study 1, but not in the high cognitive load condition, $\beta=1.61$, $t(129)=1.03$, $p>.30$. As expected, the cognitive load manipulation decreased materialistic tendencies for those with a large self-esteem discrepancy in either direction.

To test our hypothesis, we examined two-way interactions between IAT and experimental condition at values one standard deviation above and below the mean of explicit self-esteem (Aiken & West, 1991). *For participants with high explicit self-esteem* (+1SD), there was a significant two-way interaction between implicit self-esteem and experimental condition, $\beta=6.40$, $t(129)=1.96$, $p=.05$. As predicted, simple slope tests revealed that participants with high explicit (+1SD) but low implicit (−1SD) self-esteem (*large discrepancy*) were less materialistic in the cognitive load condition than in the control condition, $\beta=-3.14$, $t(129)=2.24$, $p<.05$. However, participants with high explicit (+1SD) and high implicit (+1SD) self-esteem (*small discrepancy*) were not affected by cognitive load, $\beta=1.09$, $t(129)<1$, NS. *For participants with low explicit self-esteem* (−1SD), there was also a significant two-way interaction between IAT and experimental condition, $\beta=-6.60$, $t(129)=2.16$, $p<.05$. Simple slope tests revealed that participants with low explicit (−1SD) but high implicit (+1SD) self-esteem (*large discrepancy*) were less materialistic in the cognitive load condition than in the control condition, $\beta=-4.43$, $t(129)=2.85$, $p<.01$. However, participants with low explicit (−1SD) and low implicit (−1SD) self-esteem (*small discrepancy*) were not affected by cognitive load, $\beta=-.07$, $t(129)<1$, NS. Additionally, we found no differences in the results after controlling for SDR in the analysis.

Discussion

Study 3 provides further evidence that self-esteem discrepancy causes materialism. A cognitive load manipulation, which reduces the resources available to experience discrepancies between implicit and explicit self-esteem, lowered expressions of materialism for individuals with large self-esteem discrepancies. In contrast, the same cognitive load manipulation did not influence expressions of materialism for individuals with small self-esteem discrepancies. These findings replicate and extend those from Study 2. Across studies, we find that increasing (decreasing) self-esteem discrepancy causes increases (decreases) in expressions of materialism.

In the next study, we provide more direct evidence that individuals with large discrepancies between implicit and explicit self-esteem find material possessions to be an appealing way to self-enhance. We showed consumers an ad for a product with self-enhancing benefits, and varied the extent to which they were able to associate the product with the self by using a self-referencing manipulation (Burnkrant & Unnava, 1989,
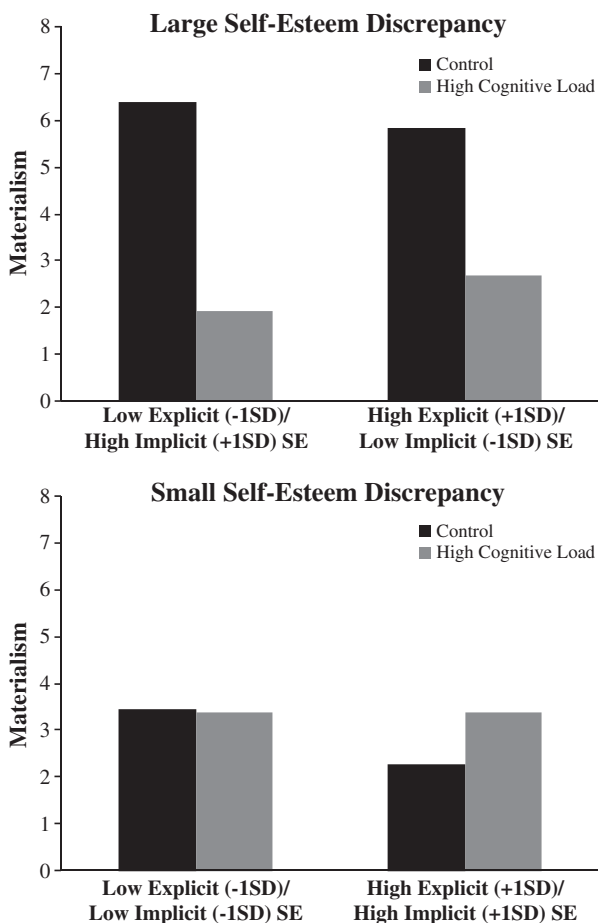
Fig. 6. Study 3: Materialism as a function of explicit self-esteem, implicit self-esteem, and cognitive load.

1995). In the high self-referencing ad, the copy described the self-enhancing benefits of owning the product using self-relevant words, such as "you" and "your." In the low self-referencing ad, the copy described the same benefits but without using self-relevant words.

Self-enhancement through material goods involves linking the self to appealing products or brands (Chaplin & John, 2005; Escalas & Bettman, 2003, 2005; Richins, 1999). For consumers really interested in self-enhancement, a product with self-enhancing benefits that is easily linked to the self (high self-referencing ad) should be more appealing than one that is more difficult to link to the self (low self-referencing ad). Thus, we predict that consumers with larger self-esteem discrepancies (who are more motivated to self-enhance) will find a product with self-enhancing benefits more appealing when described in a high self-referencing ad than a low self-referencing ad. In contrast, product attitudes for consumers with smaller self-esteem discrepancies will not be affected by the self-referencing frame.

Study 4

Sample and procedure

One-hundred-and-thirty-six students participated in the study: 66 in the high self-referencing condition and 70 in the low self-referencing condition. Participants were seated in individual cubicles equipped with dividers and a computer. First, participants completed measures of explicit self-esteem and implicit self-esteem. Next, they were asked to read an advertisement about a luxury brand of sunglasses and asked to evaluate the product. Finally, they completed a measure for socially desirable responding (SDR). After completing the study, participants were questioned about the purpose of the study and debriefed. None of the respondents identified the study hypotheses. The study took about 40 min to complete.

Self-referencing manipulation

Self-referencing was manipulated by varying the use of pronouns in the advertising copy (Burnkrant & Unnava, 1995). Both ads described the same benefits of owning a luxury brand of sunglasses. In the high self-referencing condition, the ad message linked the product's benefits directly to the consumer (e.g., "*You'll know you have the very best*"); in the low self-referencing condition, the ad message stated the product's benefits in the third-person ("*People know they have the very best*") (see Appendix for advertising copy).

To provide a check on the manipulation, we conducted a pretest with a separate sample of 70 respondents (36 in the high self-referencing condition; 34 in the low self-referencing condition) who were asked to read one of the ad versions featuring a luxury product. After reading the ad, participants were asked to indicate how self-relevant it was by responding to several statements on a scale from 1(strongly disagree) to 7 (strongly agree): "The ad seems to be written with me in mind," and "The ad related to me personally" (Burnkrant & Unnava, 1995). As expected, the high self-referencing ad was perceived to be more self-relevant than the low self-referencing ad, $M_{high\ self-referencing} = 3.01$ vs. $M_{low\ self-referencing} = 2.16$, $t(68) = 2.03$, $p < .05$.

Measures

Attitudes toward the product

Participants were asked to rate the product on five 7-point scales, such as "appealing—unappealing," and "undesirable—desirable" (see Table 1). These five items were averaged to form a composite product attitude score ($\alpha = .90$).

Results

Measure validation

Reliability analyses indicated acceptable levels of reliability for all rating scales in the study (see Table 1). We also examined discriminant validity for the implicit self-esteem measure, and confirmed that implicit self-esteem was not significantly correlated with explicit self-esteem, $r = -.04$, $p > .60$.

Hypothesis tests

We conducted a hierarchical regression analysis, using product attitude as the dependent variable with the RSES score (explicit self-esteem: continuous variable), the IAT score (implicit self-esteem: continuous variable), and message frame (high versus low self-referencing; dummy coded) as independent variables. Scores for the RSES (explicit self-esteem) and the IAT (implicit self-esteem) were centered by subtracting the mean from each person's score to eliminate multicollinearity (Aiken & West, 1991). Main effects were interpreted in the first step of the regression, two-way interactions in the second step, and the three-way interaction in the third step (Cohen & Cohen, 1983).

The results indicated a significant main effect for message frame, $\beta = .38$, $t(132) = 1.95$, $p = .05$, indicating that the high self-referencing ad was more appealing than the low self-referencing ad. There were no significant main effects for explicit self-esteem, $\beta = .07$, $t(132) < 1$, NS, and implicit self-esteem, $\beta = -.18$, $t(132) < 1$, NS, overall $R^2 = .03$, but the two-way interaction between the RSES and IAT was significant, $\beta = -.74$, $t(129) = 2.22$, $p < .05$, $\Delta R^2 = .04$, F-change $p > .15$. Critical to our primary concern, the three-way interaction between RSES, IAT, and message frame was significant, $\beta = -2.09$, $t(128) = 3.12$, $p < .01$, $\Delta R^2 = .07$, F-change $p < .01$. This effect is illustrated in Fig. 7, which is plotted at one standard deviation below and above the mean of the RSES and IAT scores (Cohen & Cohen, 1983).

To explore the interaction in more detail, we examined two-way interactions between IAT and message frame at values one standard deviation above and below the mean of explicit self-esteem (Aiken & West, 1991). *For participants with high explicit self-esteem* (+1SD), there was a significant

Large Self-Esteem Discrepancy
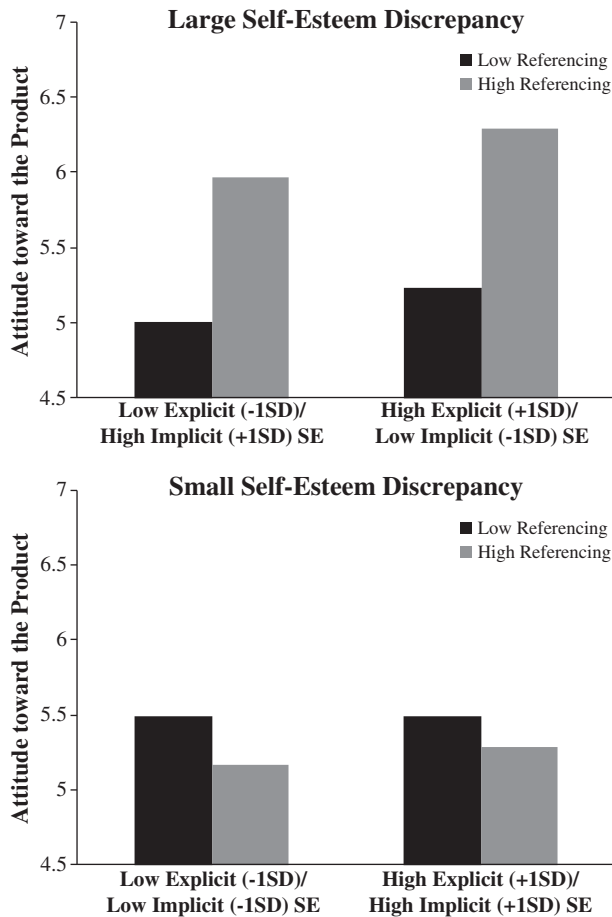

Small Self-Esteem Discrepancy

Fig. 7. Study 4: Attitude toward the product as a function of explicit self-esteem, implicit self-esteem, and message frame.

two-way interaction between implicit self-esteem and message frame, $\beta = -1.95$, $t(128) = 2.31$, $p < .05$. As predicted, simple slope tests revealed that participants with high explicit ($+1SD$) but low implicit ($-1SD$) self-esteem (*large discrepancy*) found the product more appealing when it was described in a high (vs. low) self-referencing ad, $\beta = 1.05$, $t(128) = 2.72$, $p < .01$. However, participants with high explicit ($+1SD$) and high implicit ($+1SD$) self-esteem (*small discrepancy*) were not affected by the message frame, $\beta = -.20$, $t(128) < 1$, NS. *For participants with low explicit self-esteem* ($-1SD$), there was also a significant two-way interaction between IAT and message frame, $\beta = 2.03$, $t(128) = 2.25$, $p < .05$. Simple slope tests revealed that participants with low explicit ($-1SD$) but high implicit ($+1SD$) self-esteem (*large discrepancy*) found the product more appealing when it was described in a high (vs. low) self-referencing ad, $\beta = .98$, $t(128) = 2.78$, $p < .01$. However, participants with low explicit ($-1SD$) and low implicit ($-1SD$) self-esteem (*small discrepancy*) were not affected by the message frame, $\beta = -.32$, $t(128) < 1$, NS. Additionally, we found no substantive differences in the results after controlling for SDR in the analysis.

These results are consistent with our view that consumers with large discrepancies between implicit and explicit self-esteem use material possessions to self-enhance. Consumers with large self-esteem discrepancies found the product with self-enhancing qualities more appealing when it was easily related to the self (high self-referencing ad), which facilitates self-enhancement, than when it is difficult to link to the self (low self-referencing ad). In contrast, consumers with small self-esteem discrepancies were not affected by the advertising frame.

General discussion

Our results show discrepancies between implicit and explicit self-esteem to be an important driver of materialism. In Study 1, we measured intact levels of explicit and implicit self-esteem and found larger self-esteem discrepancies were associated with higher levels of materialism. In studies 2 and 3, we tested the existence of a causal relationship between self-esteem discrepancy and materialism. We manipulated the discrepancy between explicit and implicit self-esteem, and found that increasing (decreasing) self-esteem discrepancy caused increases (decreases) in materialism. These results support the link between self-esteem discrepancy and materialism, which was based on the idea that large self-esteem discrepancies motivate consumers to self-enhance using material possessions. In Study 4, we found support for this rationale. Consumers with large self-esteem discrepancies found a luxury product with self-enhancing benefits more (less) appealing when it was easy (difficult) to relate the product to the self, verifying the link between self-esteem discrepancy and self-enhancement motives.

Contributions to materialism research

Our results add to prior materialism research in several ways. First, we introduce the idea that implicit self-esteem can be consequential to understanding materialism. Prior research has focused on the relationship between explicit feelings about the self and materialism (Braun & Wicklund, 1989; Chaplin & John, 2007; Kasser, 2002; Richins & Dawson, 1992; Solberg et al., 2004). However, current research on the self emphasizes the role of implicit self-evaluative processes (Brinol et al., 2006; Dijksterhuis, 2004; Forehand, Perkins, & Reed, 2011) as an important influence on human behavior. We bring implicit self-esteem into the materialism discussion, showing it to be important in understanding susceptibility to materialism.

Second, we introduce the idea that discrepancies between implicit and explicit self-esteem may be more predictive of a materialistic orientation than explicit self-esteem alone. Across studies, we find that consumers with high explicit self-esteem or low explicit self-esteem are not a homogenous group in expressing materialistic tendencies. Contrary to prior belief, some consumers with high explicit self-esteem express high levels of materialism (those with low implicit self-esteem) and some consumers with low explicit self-

esteem express low levels of materialism (those with low implicit self-esteem). Thus, self-esteem discrepancies are a better predictor of materialistic orientations than explicit self-esteem alone.

Third, we incorporate several methodological features that provide assurances about the link between self-esteem discrepancy and materialism. Across studies, we include a measure of socially desirable responding (SDR) and use it as a control measure in our analyses to rule out the possibility that the associations we observe between self-esteem discrepancy and materialism are due to SDR. In addition, we include a materialism measure based on collage methodology that is less transparent to subjects, reduces potential demand cues in the research setting, and is not tainted by SDR (Chaplin & John, 2007). Including measures to reduce or control for SDR is particularly important for materialism research given the fact that associations between self-esteem and materialism can be an artifact of the data produced by SDR (Mick, 1996). Further, we manipulate levels of self-esteem discrepancy to establish that self-esteem discrepancy *causes* materialism, as we propose. This is particularly important considering that the link between self-esteem and materialism is sometimes viewed as materialism → self-esteem, rather than self-esteem → materialism.

Finally, we provide a direction for future discussions about how self-esteem contributes to materialism. Material-ism researchers have recently begun to suggest that self-esteem may have many qualitative dimensions that influence how well it predicts materialism. Kasser (2002), for example, has suggested that high (explicit) self-esteem may not be as protective against materialism as previously thought. Further, he has suggested that individuals with fragile high self-esteem (positive feelings of self-worth that are vulnerable to a threat) are susceptible to materialism, as they seek extrinsic values to compensate for a fragile sense of self-esteem. Our framework accounts for this phenome-non by introducing the idea of discrepancies between explicit and implicit self-esteem, with discrepant high self-esteem (high explicit/low implicit self-esteem) being one form of fragile high self-esteem (Kernis & Paradise, 2002). In addition, our framework accounts for the opposite combination, which is discrepant low self-esteem (low explicit/high implicit self-esteem). Importantly, we predict that large discrepancies in implicit and explicit self-esteem are associated with materialism, regardless of the nature of the discrepancy (high explicit/low implicit self-esteem *or* low explicit/high implicit self-esteem).

Contributions to self-esteem research

Our findings also contribute to basic psychological re-search on the consequences of self-esteem discrepancy. As described earlier, psychologists have found that self-esteem discrepancies result in various forms of self-enhancement, such as in-group bias and narcissistic tendencies. We add self-enhancement using material possessions as an important

way that individuals respond to discrepancies between implicit and explicit self-esteem. Material possessions play an important role in our lives, and the fact that material possessions can provide a way to deal with psychological discomfort associated with the inconsistencies between explicit and implicit attitudes we hold about ourselves points to yet another reason why material goods are a salient part of consumer culture.

Second, we provide evidence that self-esteem discrepan-cies cause individuals to pursue self-enhancement. In prior research, self-esteem discrepancy has been measured by assessing intact levels of implicit and explicit self-esteem, which is then *associated* with various forms of self-enhancement. We begin our research with this approach (Study 1), but we then directly manipulate levels of self-esteem discrepancy (Study 2 and 3) to provide evidence that self-esteem discrepancies *cause* self-enhancement (materialism). Our findings rule out the possibility of a different causal mechanism, such as an unspecified third variable driving the correlation between self-esteem dis-crepancy and self-enhancement *or* reverse causation. To our knowledge, our research is the first to directly manipulate levels of self-esteem discrepancy and to show the direct consequences of increasing or decreasing self-esteem discrepancy.

Finally, our data confirm that individuals with larger self-esteem discrepancies exhibit greater self-enhancement, regardless of whether the discrepancy emerges from explicit > implicit self-esteem *or* implicit > explicit self-esteem. This is consistent with theory presented in prior psychological research (Brinol et al., 2006; Spencer et al., 2005), yet some studies in the area show self-enhancement effects for individuals with explicit > implicit self-esteem but not individuals with implicit > explicit self-esteem. Although reasons for this incon-sistency have not been identified, we speculate that a focus on material goods may be a more accessible and powerful way to self-enhance for individuals living in a culture that promotes materialistic values, making it easier to detect self-enhancement motivation among individuals with self-esteem discrepancies in either direction. Further, by manipulating discrepancies in self-esteem, we may have provided a stronger basis for uncovering consistent results than do prior studies measuring intact levels of explicit and implicit self-esteem.

Summary

Implicit self-esteem is a valuable addition to research on self-esteem and materialism. By considering implicit self-esteem in conjunction with explicit self-esteem, we have uncovered important links between self-esteem discrepancies and materialism. Explicit self-esteem, which has been a focus of prior materialism research, is only one part of the story. Our findings show the importance of adding implicit self-esteem into the analysis, revealing that there really is "more than meets the eye" when it comes to understanding materialism.

Appendix A. Advertising copy for Study 4

Low Self-Referencing Ad	High Self-Referencing Ad
Nothing says that one has arrived like owning a pair of Cavalli sunglasses. Cavalli is the hottest brand in Europe— and, when wearing Cavalli sunglasses, people know they have the very best. Cavalli is synonymous with luxury, class, and success. Cavalli sunglasses are the choice of the rich and famous. Step above the crowd and wear a pair of Cavalli sunglasses. Available exclusively at Neiman Marcus, Nordstrom, and Saks Fifth Avenue	Nothing says that you've arrived like owning a pair of Cavalli sunglasses. Cavalli is the hottest brand in Europe— and, when wearing Cavalli sunglasses, you'll know you have the very best. Cavalli is synonymous with luxury, class, and success. Cavalli sunglasses are the choice of the rich and famous. Step above the crowd and wear your own pair of Cavalli sunglasses. Available exclusively at Neiman Marcus, Nordstrom, and Saks Fifth Avenue.

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