

## ORIGINAL ARTICLE

WILEY

# How does it feel to be greedy? The role of pride in avaricious acquisition

Eric J. Mercadante  | Jessica L. Tracy

Department of Psychology, The University of British Columbia, British Columbia, Vancouver, Canada

## Correspondence

Eric J. Mercadante, The University of British Columbia, Vancouver, BC V6T 1Z4, Canada.

Email: [eric.mercadante@psych.ubc.ca](mailto:eric.mercadante@psych.ubc.ca)

## Funding information

Social Sciences and Humanities Research Council of Canada, Grant/Award Number: 435-2018-0154

## Abstract

**Background:** Psychologists define greed as a desire to acquire more and the dissatisfaction of never having enough, but studies have not examined the psychological processes that underlie and sustain this disposition. We propose that a desire to attain pride might be one emotional mechanism that promotes greedy acquisition. In this account, greedy people experience a boost of pride from acquisition but these feelings are short-lived, potentially leading to the perpetual acquisitiveness characteristic of dispositional greed.

**Method:** Four studies (including one reported in the SOM due to space limitations) using correlational, longitudinal, and daily-diary methods ( $N = 1778$ ) test hypotheses about how individuals high in dispositional greed respond emotionally to new acquisitions, both when they occur and several weeks later.

**Results:** Greedy people experience heightened feelings of authentic pride in response to new acquisitions, but these feelings quickly fade. This pattern is distinct to authentic pride and not attributable to shared variance with positive affect. Greedy people also feel elevated hubristic pride in response to acquisitions, but this seems to be part of a dispositional tendency observed in response to a range of events.

**Conclusions:** These studies provide a new understanding of a psychological process that is associated with, and could partially explain, greedy acquisition.

## KEYWORDS

emotion, greed, personality, pride

## 1 | INTRODUCTION

Definitions of greed—a desire to acquire more combined with the dissatisfaction of never having enough (Seuntjens, Zeelenberg, Breugelmans, et al., 2015)—highlight the seemingly paradoxical nature of the disposition. Greedy individuals are those who consistently seek out new

possessions that, just as consistently, fail to provide them with lasting satisfaction. What might explain such a frustrating and fruitless behavioral pattern?

In this research, we investigated greedy people's tendency to always want more yet never be satisfied with the things they acquire, by examining emotional responses to new acquisitions. We propose that one reason for the

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2023 The Authors. *Journal of Personality* published by Wiley Periodicals LLC.

chronic motivation to acquire among those high in greed is that the act of acquiring provides them with potent but fleeting feelings of pride. Yet because these feelings are elicited by the act of acquiring something rather than by the item acquired, they fade shortly after acquisition. If this account is correct, it may offer a potential explanation for greedy people's pervasive acquisitiveness, as the act of obtaining new possessions would provide a short-lived boost of a highly reinforcing emotion, in need of regular replenishment. In this research, we test the first proposition of this account: that greedy individuals show a distinctively strong pride response to new acquisitions, and this emotional response dissipates quickly afterward.

## 1.1 | WHAT IS DISPOSITIONAL GREED?

Greed is similar to several previously studied psychological constructs, but few scholars have researched greed as a distinct psychological entity until recently (Gilliland & Anderson, 2014; Wang et al., 2011; Wang & Murnighan, 2011). In 2015, Seuntjens and colleagues conducted the first bottom-up exploration of how people conceptualize greed. Based on participants' ratings of the centrality of various potential greed features (which were initially generated by another set of participants), these authors defined greed as "a desire to acquire more and the dissatisfaction of never having enough" (Seuntjens, Zeelenberg, Breugelmans, et al., 2015, p. 518). They also developed a reliable 7-item scale for measuring dispositional greed (Seuntjens, Zeelenberg, van de Ven, et al., 2015), with items capturing a preoccupation with accumulating money and possessions (e.g., "One can never have too much money"; "I can't imagine having too many things") as well as insatiability more generally (e.g., "It doesn't matter how much I have. I'm never completely satisfied"; "I always want more"). This scale converges onto the same latent factor as measures of dispositional greed that were developed using other methods (Mussel et al., 2018).

Other studies have highlighted important differences between greed and related constructs, specifically maximization and materialism. The central difference is that greedy people want more of *everything*, whereas maximizers and materialists are more narrowly acquisitive for certain things. Maximizers rigorously seek out the highest quality products and are not satisfied with anything less (Nenkov et al., 2008). Materialists greatly value material goods and believe that one's value as a person can be summarized by the things they own (Richins, 2004). In contrast, greedy people tend to be more impulsive than maximizers, unable to resist acquiring something desirable without concern for whether there might be a

superior option. Furthermore, their acquisitiveness is less specific than that of materialists; greedy people seek to over-acquire food, sexual partners, and Facebook friends, in addition to material goods (Seuntjens, Zeelenberg, van de Ven, et al., 2015). Overall, prior research has identified *what* greed is and how it differs from related constructs, but not *why* greedy people always want more and simultaneously feel dissatisfied with never having enough.

## 1.2 | THE ROLE OF PRIDE IN GREEDY ACQUISITION

Greed is characterized, perhaps most centrally, by two distinct but related sets of feelings: a desire to acquire more and a dissatisfaction with never having enough (Seuntjens, Zeelenberg, Breugelmans, et al., 2015). One potential emotional mechanism that might explain both of these components is that greedy individuals feel pride in response to acquiring new possessions but not from owning them, resulting in bursts of pride that are ultimately short-lived.

This emotional dynamic may stem, in part, from the unique personality profile of greedy individuals. Individuals high in trait greed tend to be low in self-esteem and life satisfaction, and envious of others (Seuntjens, Zeelenberg, van de Ven, et al., 2015). Consistent with these trait-level associations, a recent study found that greedy people hold negative core beliefs about themselves, such as being unloved and unworthy (Mussel et al., 2022). Yet greedy people are no more likely than others to become depressed (Seuntjens, Zeelenberg, van de Ven, et al., 2015) and they tend to be highly motivated to achieve their goals and feel productive (Krekels & Pandelaere, 2015). These findings suggest that greedy people are dissatisfied with themselves and their life circumstances, but they are not hopeless. Instead, they seem to believe they know how to satisfy their needs and aspirations, and are motivated to do so.

Given that greedy people place great importance on the accumulation of wealth, among other things, they likely view acquiring money and possessions as a viable path toward psychological fulfillment. As a result, each new acquisition represents meaningful progress toward this identity goal. Whereas less greedy people may seek to acquire because they expect to enjoy or make use of the acquired item, greedy people may instead seek to acquire because the *experience* of acquiring something, rather than the acquired thing, makes them feel closer to becoming their ideal self. This account of greedy acquisition suggests that pride, specifically, should be more relevant to this process than generalized positive affect or other positive emotions like happiness, which are common

emotions people feel when they acquire new, desirable items (e.g., Weidman & Dunn, 2016). According to our account, the critical feature that distinguishes greedy people's emotional responses to acquisition is that acquiring new possessions serves as a means toward identity goal fulfillment and therefore should elicit pride (Tracy & Robins, 2004). These elevated feelings of pride may, in turn, provide a respite from the chronic low self-esteem that greedy individuals tend to report.

Importantly, the pride greedy people experience in response to acquisition is likely to be brief, explaining their perpetual dissatisfaction and feelings of never having enough. The reason for this brevity lies in the nature of their acquisition goals. As greedy individuals transition from viewing the item as something they *just acquired* to something they now *own*, the item no longer represents progress toward their goal of acquiring more. In other words, because greedy individuals' identity goals are about acquisition rather than ownership, the pride associated with a new possession is confined to the acquisition experience and should fade shortly after. Nonetheless, despite the acquisition's failure to provide lasting feelings of pride, greedy people may soon become motivated to seek out new acquisitions again, to achieve another temporary boost in pride, reigniting this dynamic emotional process. The result is a cybernetic feedback loop, in which greedy people experience rewarding feelings of pride upon acquiring something new, but the short-lived nature of these feelings might also cause them to serve as a reinforcement that entices greedy people to repeatedly seek out new acquisitions.

This feature of our model raises a question: which of pride's two distinct facets, authentic or hubristic (Tracy & Robins, 2007), is the critical emotion that rises and falls in response to greedy acquisition? Authentic pride is the facet of pride common among individuals high in genuine self-esteem; it is characterized by feelings of accomplishment, confidence, and productivity, and associated with a host of positive intrapsychic and interpersonal outcomes. In contrast, hubristic pride is the facet of pride common among individuals high in narcissism; it is characterized by feelings of arrogance and egotism, and associated with poor psychological well-being and antisocial behavior (Mercadante & Tracy, 2022; Tracy et al., 2009; Tracy & Robins, 2007). Despite the substantial differences between these two facets, there are reasons to suspect that both could serve as emotional rewards for greedy individuals' acquisitiveness.

To the extent that greedy people use acquisition as a regulatory behavior to elicit positive self-relevant feelings, we would expect a boost in *authentic pride*—the form of pride most strongly linked to high self-esteem and life satisfaction—following acquisition experiences, and a

subsequent drop in this same form of pride later on. In contrast, hubristic pride is associated with psychologically aversive states, such as low self-esteem, anxiety, and negative affect (Dickens & Robins, 2022; Tracy et al., 2009; Tracy & Robins, 2007), so these feelings are unlikely to satisfy greedy people's psychological or emotional needs, making authentic pride the facet more likely to emotionally reward greedy acquisition. However, if greedy people base their self-worth on how much they can acquire rather than on authentic accomplishments or good deeds, then hubristic pride may be the form of pride elicited by their acquisitions, because it is associated with an inauthentic sense of self (Tracy & Robins, 2007). We address these possibilities by measuring both facets of pride in all studies.

## 2 | THE PRESENT RESEARCH

In four studies (including one reported in SOM1 due to space limitations), we tested this novel account of greed by examining how individuals' emotional responses to recent acquisitions vary over time based on their dispositional greed. In each study, we measured several other emotions as well, to test the specificity of pride as the focal emotion greedy people feel in response to acquisition. Across studies, we tested two primary hypotheses: (1) greedy people will experience a boost in pride at acquisition and (2) these feelings will decline between acquisition and later assessments.

Prior to conducting these empirical studies, we preregistered our overarching hypotheses for this line of research, and prior to conducting each study, we preregistered specific hypotheses and methods (see <https://bit.ly/3umZmBw> for preregistrations of all studies reported here).<sup>1</sup> In each preregistration document, we report all measures, exclusion criteria, and procedures for determining sample size. We focused our preregistered hypotheses on authentic pride for theoretical reasons and because we observed a more consistent pattern of results for authentic pride, compared to hubristic pride, in our first studies (Studies S1 and 1). All analyses conducted concerning hubristic pride can therefore be considered exploratory.

## 3 | BRIEF SUMMARY OF STUDY S1

As a first test of our hypotheses, we recruited 197 American adults from Amazon Mechanical Turk (MTurk; 58% female; age range = 20–74, Median = 35 years; see SOM1 for the full sample description and all other study details). These participants completed the Dispositional Greed

Scale (Seuntjens, Zeelenberg, van de Ven, et al., 2015;  $\alpha=0.84$ ), then recalled their feelings about their most recent nonessential purchase (i.e., something they wanted but did not need), twice: (1) at the moment of acquisition and immediately afterward, and (2) currently in their daily lives. Given that this was our first test of our theoretical model, we preregistered plans to test for a boost and drop in authentic pride and in positive affect.

Results showed that greedy people felt elevated authentic pride at acquisition and these feelings faded significantly more over time compared to people low in greed. Both the boost and drop in authentic pride held controlling for shared variance with positive affect, pleasantness, and activation (Feldman Barrett & Russell, 1998). In contrast, greedy people did not report greater positive affect at the moment of acquisition compared to those low in greed, nor did their feelings of positive affect decline over time compared to people low in greed. We also explored how greed was related to hubristic pride in response to acquisition, and found evidence for a boost at acquisition, but no indication that these feelings declined afterward. For this reason, in all subsequent studies, we preregistered hypotheses of a boost and drop in authentic pride specifically, and not in positive affect or hubristic pride.

## 4 | STUDY 1

In Study 1, we used a longitudinal design to replicate the results of Study S1 using a method that allowed us to capture emotional responses to acquisitions made very recently (<1 week after the purchase occurred) and track how these emotions changed over the subsequent 4 weeks. Based on the results of Study S1, we preregistered the hypothesis that greedy individuals would experience a boost in authentic pride at acquisition and these feelings would fade significantly after acquisition. (<https://bit.ly/3yFDjc5>).

### 4.1 | Method

#### 4.1.1 | Participants

Four hundred adults were recruited from MTurk to participate in this study. This number was based on a power analysis that indicated 325 participants were required to obtain 80% power to detect an effect of the size observed for the relationship between greed and authentic pride at acquisition in Study S1 ( $r=0.16$ ). Prior to participating, interested MTurk workers reported the most recent non-essential purchase they had made, its cost, and the week

that they had purchased it. To minimize potential effects of memory biases (Parkinson et al., 1995; Robinson & Clore, 2002), we accepted only participants who had reported a purchase within the past week. We also required that this purchase cost at least \$100, to maximize the likelihood that these were meaningful items that would be salient in participants' minds for the duration of the study. Importantly, these items did not need to be material possessions; greedy people are broadly motivated to acquire, excessively seeking things like food and sexual partners along with money and material possessions (Seuntjens, Zeelenberg, van de Ven, et al., 2015), so we allowed them to report experiential acquisitions (e.g., vacations, tickets to events, dining at restaurants, etc.), as well as material acquisitions. Following the criteria specified in our preregistration, 84 participants were excluded for failing an attention check during the initial assessment. This resulted in a final sample of 316 participants (59% female; age range = 18–73, Median = 33 years). Participants were paid \$0.35 for completing Part 1, and they earned \$0.50 for each follow-up survey.

#### 4.1.2 | Procedure

Participants first completed the Dispositional Greed Scale (Seuntjens, Zeelenberg, van de Ven, et al., 2015;  $\alpha=0.84$ ) and the Rosenberg Self-Esteem Scale (Rosenberg, 1965;  $\alpha=0.92$ ). They then reported how their recent purchase made them feel “at the moment you got it and immediately after” (henceforth referred to as Acquisition;  $n=316$ ) and “now in your daily life” (Time 1;  $n=316$ ).<sup>2</sup> They were then emailed follow-up surveys 1 week (Time 2;  $n=218$  completed surveys, 69% of original sample), 2 weeks (Time 3;  $n=204$ , 65% of original sample), 3 weeks (Time 4;  $n=188$ ; 60% of original sample), and 4 weeks (Time 5;  $n=194$ ; 61% of original sample) after the date they completed the first part of the study. At each follow-up, participants responded to the same prompt used to assess current feelings in the initial session (Time 1). For all time points, participants reported their emotions about the purchased item using the Authentic and Hubristic Pride Scales (Tracy & Robins, 2007;  $\alpha_{\text{authentic pride}}=0.91-0.95$ ,  $\alpha_{\text{hubristic pride}}=0.90-0.93$ ), the positive and negative Affect Schedule (Watson et al., 1988;  $\alpha_{\text{PA}}=0.91-0.95$ ,  $\alpha_{\text{NA}}=0.91-0.96$ ), and the Current Mood Questionnaire (Feldman Barrett & Russell, 1998;  $\alpha_{\text{Pleasantness}}=0.74-0.80$ ,  $\alpha_{\text{Activation}}=0.07-0.34$ ). We included the Current Mood Questionnaire along with the PANAS to test whether any observed effects of greed were unique to pride or better captured by range of broader positive affective states. We also included the negative affect subscale of the PANAS for exploratory purposes (see SOM2 for analyses predicting

TABLE 1 Linear mixed-effects models testing the relationship between greed and both facets of pride and positive affect across time, Study 1.

Coefficient	Authentic pride				Hubristic pride				Positive affect			
	$\beta$	$t$	$p$	95% CI	$\beta$	$t$	$p$	95% CI	$\beta$	$t$	$p$	95% CI
(Intercept)	0.17	3.39	<0.001	[0.07, 0.27]	0.15	2.85	0.005	[0.05, 0.26]	0.25	4.96	<0.001	[0.15, 0.35]
Greed	0.33 (0.12)	6.39 (4.76)	<0.001	[0.23, 0.43]	0.29 (0.21)	6.17 (4.75)	<0.001	[0.20, 0.38] ([0.12, 0.29])	0.28 (0.02)	5.32 (0.85)	<0.001	[0.17, 0.38] ([-0.03, 0.08])
Self-esteem	0.29	5.82	<0.001	[0.19, 0.39]	-0.12	-2.61	0.01	[-0.21, -0.02]	0.27	5.29	<0.001	[0.17, 0.36]
Cost	0.04	0.85	0.40	[-0.05, 0.13]	0.01	0.14	0.89	[-0.08, 0.09]	0.03	0.64	0.52	[-0.06, 0.13]
Time	-0.07	-8.23	<0.001	[-0.08, -0.05]	-0.05	-6.15	<0.001	[-0.06, -0.03]	-0.10	-13.01	<0.001	[-0.12, -0.09]
Greed $\times$ Time interaction	-0.04 (-0.02)	-5.03 (-3.27)	<0.001	[-0.06, -0.02] ([-0.03, -0.01])	-0.03 (-0.02)	-3.88 (-3.26)	<0.001	[-0.05, -0.01] ([-0.04, -0.01])	-0.03 (0.001)	-3.75 (0.21)	<0.001	[-0.05, -0.01] ([-0.01, 0.01])

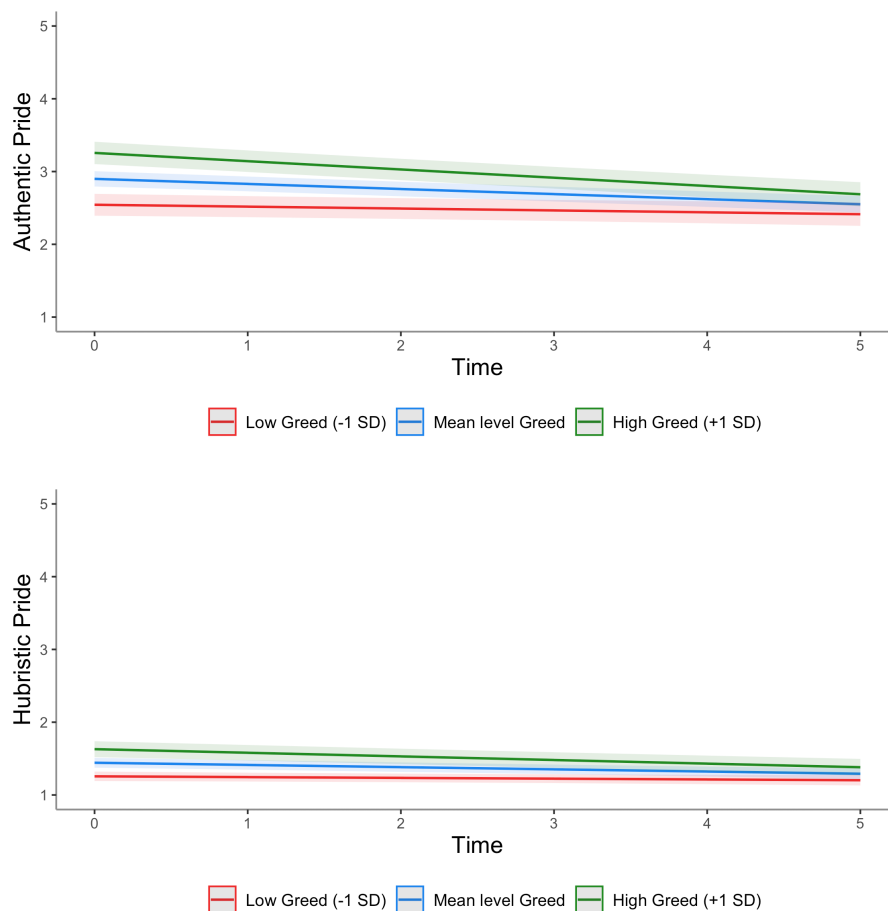
Note: For authentic and hubristic pride, numbers in parentheses control for positive affect, pleasantness, and activation. For positive affect, numbers in parentheses control for authentic pride. All coefficients are standardized regression coefficients. Bolded values indicate statistical significance,  $p > 0.05$ .

these emotions in each study). Including these scales also increased the number of items the participants viewed and rated each time they reported their emotions, potentially distracting them from the disproportionate number of pride items included, and thus, reducing demand characteristics. All items from all measures were intermixed at each measurement occasion to further help disguise the hypothesis of the study.

## 4.2 | Results

Participants purchased a range of items: electronics (39%), apparel (27%), home improvements (16%), nonelectronic leisure (8%), experiences (5%), automotive (3%), health and beauty (1%), and 1% did not report the purchased item they had in mind. The cost of purchases ranged from \$100 to \$100,000 with a median of \$250. Descriptive statistics and correlations among all trait-level variables are reported in Table S6 in SOM3. Data from all time points were combined into a multi-level model with observations nested within participants. We tested our predictions by conducting three linear mixed-effects models in which authentic pride, hubristic pride, or positive affect, respectively, was regressed onto greed, time (i.e., number of weeks since acquisition), and an interaction between greed and time, controlling for the cost of the purchase and self-esteem. As preregistered, we included self-esteem as a covariate due to its strong relationship with authentic pride, which allowed us to better identify the unique relationship between greed and authentic pride, and we included this covariate in the models for hubristic pride and positive affect for the sake of consistency. We included a random intercept for participant and a random slope for greed. All variables were standardized, except for time, which was coded numerically such that acquisition was coded as 0 and each later time point was coded to represent the number of weeks participants had owned the item (i.e., 1 for Time 1, 2 for Time 2, etc.). Given that participants reported their Time 1 emotions during the first session of the study, these models include all 316 participants who reported their emotions at Time 1. We chose to model time point as a continuous variable to simplify the presentation of the results, but conclusions are identical if we model time point as a categorical variable (see SOM4 for models from each study with time coded as a categorical variable).

Supporting our preregistered hypothesis, greedy people felt significantly greater authentic pride at acquisition than less greedy people (see Table 1). Greedy people also felt elevated hubristic pride at acquisition. In addition, greed remained a significant predictor of authentic and hubristic pride at acquisition after controlling for shared



**FIGURE 1** Interactions between dispositional greed and time predicting authentic pride (top) and hubristic pride (bottom) in the purchased item from acquisition to time 5, Study 1. Fans around the regression lines represent the standard error. Plots were created using the sjPlot package in R (Lüdtke, 2021).

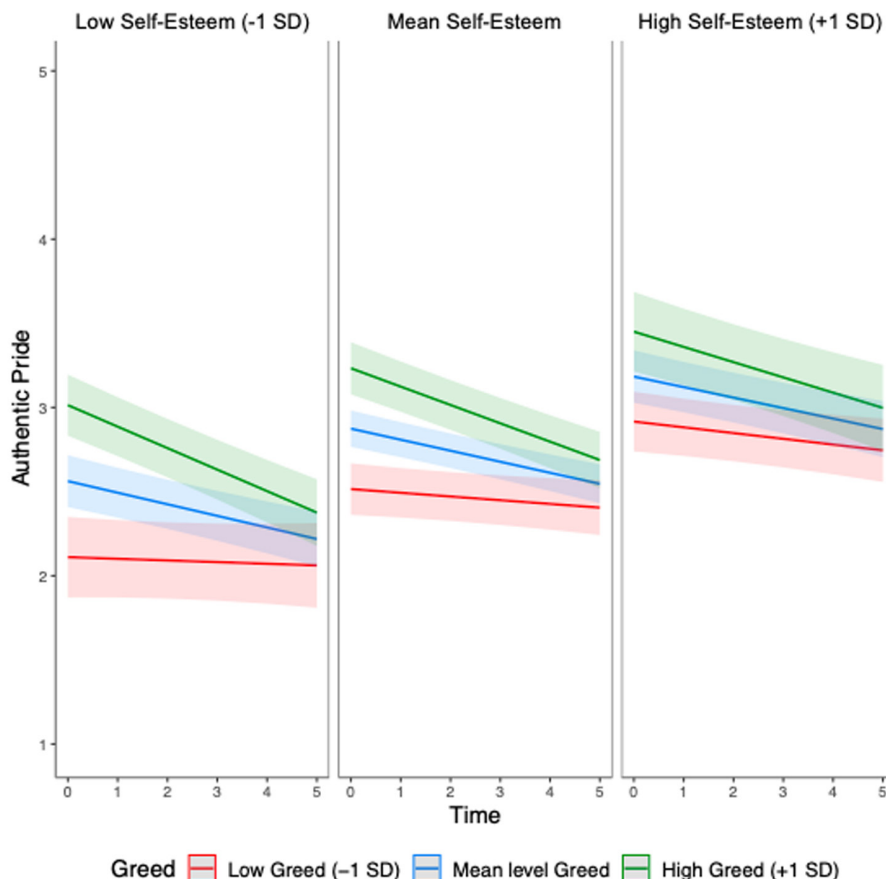
variance with positive affect, pleasantness, and activation. Consistent with these results, after controlling for shared variance with authentic pride, greedy people did not report greater feelings of positive affect in their purchases compared to people low in greed; nor did they report elevated pleasantness or activation (see SOM2). These results indicate that feeling pride in response to acquisition differentiates greedy people's acquisition experiences from those of individuals low in greed.

Also supporting our preregistered hypothesis, a significant interaction emerged between greed and time predicting authentic pride, indicating that greedy people's feelings of authentic pride declined significantly more than less greedy people's did after acquisition (see Figure 1). This interaction remained significant controlling for shared variance with positive affect, pleasantness, and activation. We observed a similar interaction for hubristic pride, and this interaction also held controlling for shared variance with positive affect, pleasantness, and activation. Unlike both facets of pride, changes in positive

affect since acquisition were unrelated to greed after controlling for authentic pride.

#### 4.2.1 | Exploratory analyses

Our theoretical model proposes that acquiring new possessions is a regulatory behavior that greedy people use to elicit desirable feelings of pride. If this is the case, greedy people with low self-esteem might be especially motivated to pursue acquisitions, because those with low self-esteem are more in need of the boosts of self-worth provided by feelings of authentic pride (Tracy & Robins, 2007). As a result, greedy individuals with low self-esteem might derive greater emotional benefits from acquisition relative to those with higher self-esteem and therefore higher baseline levels of authentic pride, resulting in a more pronounced boost in authentic pride for these individuals. These individuals might also report a more intense



**FIGURE 2** Three-way interaction between greed, self-esteem, and time predicting authentic pride in the purchased item from acquisition to time 5, Study 1. Fans around the regression lines represent the standard error. Plots were created using the sjPlot package in R (Lüdtke, 2021).

subsequent drop in pride, because they have further to fall to return to baseline level. To test this possibility, we added an interaction term between greed and self-esteem and a three-way interaction term between greed, self-esteem, and time, to the models for authentic and hubristic pride.

For authentic pride, an interaction emerged between greed and self-esteem,  $\beta = -0.09$ ,  $t(370) = -1.99$ ,  $p = 0.048$ , 95% CI =  $[-0.17, -0.002]$ , indicating that greedy people with low self-esteem experienced a more pronounced boost in authentic pride at acquisition than greedy people with high self-esteem. In other words, although greedy people and people high in self-esteem each felt greater authentic pride at acquisition than people low in greed and people low in self-esteem, respectively, these two main effects were not additive for greedy individuals with high self-esteem. Instead, greedy people with low and high self-esteem felt more similar levels of authentic pride at acquisition than what would be expected based on the two main effects alone. In contrast, for people low in greed, authentic pride at acquisition was strongly

determined by self-esteem (see Figure 2). We also observed a significant three-way interaction between greed, self-esteem, and time,  $\beta = 0.01$ ,  $t(1155) = 2.06$ ,  $p = 0.04$ , 95% CI =  $[0.001, 0.03]$ , indicating that greedy people with low self-esteem experienced a significantly greater decline in authentic pride after acquisition.

A similar interaction emerged between greed and self-esteem predicting hubristic pride at acquisition,  $\beta = -0.13$ ,  $t(453) = -3.23$ ,  $p = 0.001$ , 95% CI =  $[-0.21, -0.05]$ . However, we did not find a three-way interaction between greed, self-esteem, and time for hubristic pride,  $\beta = 0.01$ ,  $t(1148) = 1.47$ ,  $p = 0.14$ , 95% CI =  $[-0.003, 0.02]$ . Greedy people with low self-esteem thus seem to experience a notable boost in hubristic pride from acquisitions, but these feelings do not decline any more precipitously than those of greedy people with high self-esteem. Nonetheless, all of these analyses are exploratory, and this study was not powered to test three-way interactions, so replication is needed. We therefore preregistered this prediction in Studies 2 and 3, and in Study 3 included a much larger sample size to detect the effect.

### 4.3 | Discussion

Supporting our preregistered predictions, greedy people responded to acquisitions with elevated authentic pride that dropped soon afterward. We also found that greedy people felt elevated hubristic pride at acquisition, and these feelings also declined soon afterward. Further supporting our theoretical account, we did not observe analogous effects of greed on positive affect, pleasantness, or activation (see SOM2), and the effects of greed on pride held controlling for all three affective states, suggesting that feeling pride in recent acquisitions might be a critical emotional response that differentiates greedy people from those low in greed.

In addition, exploratory analyses suggested that greedy people with low self-esteem experience a more extreme boost in authentic pride at acquisition and a more extreme decline afterward, compared to greedy people with high self-esteem. This interaction suggests that greedy people with low self-esteem derive greater emotional benefits from acquisition, relative to their typical feelings about themselves, but these feelings also fade significantly faster for these greedy people compared to their counterparts with high self-esteem. A more intense boost in pride might occur because individuals with low self-esteem are more in need of a pride boost than those with high self-esteem, and thus more likely to pursue acquisitions for the explicit purpose of increasing authentic pride. Given that their baseline levels of authentic pride tend to be lower than those of individuals with high self-esteem, the greater decline in authentic pride over time among these individuals might reflect that they have farther to fall on their return to baseline after the acquisition experience has ended.

We also observed a more pronounced boost of hubristic pride among greedy people with low self-esteem at acquisition, but these feelings did not decline more steeply. This effect is more difficult to interpret because hubristic pride is related to low, rather than high, self-esteem, (Tracy et al., 2009; Tracy & Robins, 2007); we therefore hesitate to interpret this interaction at this time and test it again in Studies 2 and 3 to determine its robustness.

In summary, Study 1 supports our preregistered hypotheses using a longitudinal method that allowed us to capture changes in pride over time. However, this study relied on participants' recollections of their emotional experiences during acquisitions that occurred up to a week prior to assessment. This limitation is unlikely to bias results, as 1-week retrospective reports of emotion tend to be as accurate as reports made on the same day (Parkinson et al., 1995; Robinson & Clore, 2002), but to eliminate any possibility of recollection bias Studies 2 and 3 used a daily-diary procedure to measure participants' immediate

emotional responses to new acquisitions on the same day they purchased them.

## 5 | STUDY 2

To avoid capturing responses to mundane, meaningless acquisitions (e.g., coffee, parking), we specified the following eligibility criteria (<https://bit.ly/3AqeGRK>): (1) the purchase was nonessential (i.e., something they wanted but did not need), (2) the participant bought it to keep for themselves, (3) it cost at least \$25, and (4) it was a material item that they planned to own for some time. We lowered the cost requirement to \$25 in this study because we did not observe significant effects of cost in Study 1 and expected to more easily recruit the required sample size if this criterion was reduced.

We preregistered the predictions that greedy people would show a boost in authentic pride in response to acquisitions, followed by a drop shortly after. We also predicted that two interactions would emerge between greed and self-esteem such that (1) greedy people with low self-esteem would report a greater boost of authentic pride at acquisition and (2) greedy people with low self-esteem would report a steeper drop in authentic pride at the later time points (<https://bit.ly/3yBYpId>). Given that we restricted eligible acquisitions to material items, we also measured materialism (Richins, 2004) to test whether the observed emotional dynamic is specific to greed or partly attributable to shared variance with this related disposition.

### 5.1 | Method

#### 5.1.1 | Participants

Based on an analysis of the sample size at which correlations stabilize (Schönbrodt & Perugini, 2013), we aimed to obtain 250 data points (i.e., unique acquisitions) for analyses. Preliminary data indicated that we could expect each participant to make an average of 0.75 purchases that met our criteria during their time in the study, so we planned to recruit at least 335 participants.<sup>3</sup> In total, 346 undergraduates were recruited (78% female, age range = 18–49, median = 20 years), and our final sample consisted of 269 purchases made by 183 participants (82% female, age range = 18–49, median = 20 years). The number of purchases made by each participant did not vary based on greed,  $r(344) = 0.06$ ,  $p = 0.27$ . Participants completed the study in exchange for course credit.

### 5.1.2 | Procedure

Participants first completed a series of survey measures including the Dispositional Greed Scale (Seuntjens, Zeelenberg, van de Ven, et al., 2015;  $\alpha=0.69$ ), the Rosenberg Self-Esteem Scale (Rosenberg, 1965;  $\alpha=0.89$ ), and the Material Values Scale (Richins, 2004;  $\alpha=0.77$ ). Each day for the following 2 weeks, participants received daily emails at approximately 5 p.m. asking if they had made a purchase that met our prespecified criteria that day. In these emails, we emphasized that the item “MUST be something you bought TODAY” and that they should not complete the survey if they did not make an eligible purchase that day. If they had made a purchase that met our criteria, they reported what the item was, its cost, and “how [the item] makes you feel RIGHT NOW” using the Authentic and Hubristic Pride Scales (Tracy & Robins, 2007;  $\alpha=0.88$  and  $\alpha=0.81$ , respectively), the Positive and Negative Affect Schedule (Watson et al., 1988;  $\alpha=0.89$  and  $\alpha=0.82$ , respectively), and the Current Mood Questionnaire (Feldman Barrett & Russell, 1998,  $\alpha_{\text{Pleasantness}}=0.71$  and  $\alpha_{\text{Activation}}=0.16$ ).

For each acquisition, participants were emailed follow-up surveys 1 week later ( $n=201$  completed surveys, 75% of those who made purchases) and 2 weeks later ( $n=195$  completed surveys, 72% of those who made purchases), which again asked “how [the item] makes you feel RIGHT NOW” and included the same emotion measures ( $\alpha_{\text{authentic pride}}=0.90, 0.92$ ,  $\alpha_{\text{hubristic pride}}=0.84, 0.87$ ,  $\alpha_{\text{PA}}=0.91, 0.92$ ,  $\alpha_{\text{NA}}=0.89, 0.89$ ,  $\alpha_{\text{pleasantness}}=0.71, 0.70$ , and  $\alpha_{\text{activation}}=0.22, 0.11$ ). We ended follow-up assessments after 2 weeks because exploratory analyses from Study 1 revealed that greedy people's authentic and hubristic pride did not drop significantly more over the assessments that occurred after 2 weeks (see SOM6).

## 5.2 | Results

Participants purchased a range of items: apparel (65%), nonelectronic leisure (22%), health and beauty (8%), electronics (6%), home improvements (6%), experiences (5%), and automotive (<1%). The cost of purchases ranged from \$25 to \$1450 with a median of \$62. Descriptive statistics and correlations among all trait-level variables are reported in Table S7 in SOM3. Data from all time points were combined into a multi-level model with observations nested within participants, and we also included random intercepts for greed and self-esteem in each model, given that some participants made multiple purchases but have the same values for greed and self-esteem at each purchase (results are identical with or without these random intercepts included). In addition, for models that include

materialism (see below), we included a random intercept for materialism, for the same reason. We conducted two linear mixed-effects models in which authentic or hubristic pride, respectively, was regressed onto greed, time, and an interaction term between greed and time, controlling for the cost of the purchase. We also added self-esteem, an interaction between greed and self-esteem, and a three-way interaction between greed, self-esteem, and time to each model. In each model, we included a random intercept for participant and a random slope for greed. These models include all participants who completed at least one follow-up survey; participants who did not complete either follow-up were removed using listwise deletion.

In contrast to results from Study 1 and our preregistered hypothesis, we did not observe a main effect of greed on authentic pride at acquisition, nor a significant interaction between greed and time (see Table 2). However, consistent with Study 1 and our preregistered hypothesis, an interaction emerged between greed and self-esteem at acquisition, indicating that greedy people with low self-esteem experienced a greater boost in authentic pride at acquisition compared to greedy people with high self-esteem. We also observed a significant three-way interaction between greed, self-esteem, and time, indicating that greedy people with low self-esteem experienced a significantly greater decline in authentic pride after acquisition compared to greedy people with high self-esteem. Both the interaction between greed and self-esteem at acquisition, and the three-way interaction between greed, self-esteem, and time, remained significant controlling for positive affect, pleasantness, and activation. As in Study 1, we conducted the same analyses but treating positive affect as the response variable, and we did not observe significant interactions between greed and self-esteem predicting a boost or drop in positive affect (see Table 2 and SOM2 for results of models predicting negative affect, pleasantness, and activation). We next added materialism and an interaction between materialism and time to the model. We did not observe a significant effect of materialism on authentic pride at acquisition,  $\beta=0.16$ ,  $t(454)=1.51$ ,  $p=0.13$ , 95% CI=[−0.05, 0.38], nor a significant interaction between materialism and time,  $\beta=0.01$ ,  $t(509)=0.24$ ,  $p=0.81$ , 95% CI=[−0.07, 0.09].

In contrast to Study 1, greedy people did not feel significantly greater hubristic pride in their purchases at acquisition than less greedy people, and this effect remained nonsignificant after controlling for positive affect, pleasantness, and activation. We also observed no significant interaction between greed and time on hubristic pride, indicating that greedy people's hubristic pride in their purchase did not decline significantly more than less greedy people's did. We also did not observe an interaction between greed and self-esteem predicting hubristic pride

TABLE 2 Mixed-effects models for both facets of pride across time, Study 2.

Coefficient	Authentic pride				Hubristic pride				Positive affect			
	$\beta$	$t$	$p$	95% CI	$\beta$	$t$	$p$	95% CI	$\beta$	$t$	$p$	95% CI
(Intercept)	<b>0.30</b>	<b>3.01</b>	<b>0.004</b>	<b>[0.10, 0.50]</b>	<b>0.22</b>	<b>2.35</b>	<b>0.02</b>	<b>[0.03, 0.41]</b>	<b>0.55</b>	<b>6.30</b>	<b>&lt;0.001</b>	<b>[0.38, 0.72]</b>
Greed	0.04 (−0.04)	0.41 (−0.70)	0.68 (0.49)	[−0.15, 0.23] ([−0.14, 0.07])	0.18 (0.12)	1.95 (1.51)	0.054 (0.13)	[−0.004, 0.36] ([−0.04, 0.28])	0.10 (0.07)	1.13 (1.38)	0.26 (0.17)	[−0.07, 0.27] ([−0.03, 0.16])
Self-esteem	<b>0.18</b>	<b>2.22</b>	<b>0.03</b>	<b>[0.02, 0.35]</b>	−0.01	−0.10	0.92	[−0.17, 0.16]	0.12	1.49	0.14	[−0.04, 0.28]
Cost	0.02	0.72	0.47	[−0.04, 0.09]	0.05	1.37	0.17	[−0.02, 0.12]	0.02	0.72	0.47	[−0.04, 0.09]
Greed × Self-esteem interaction	<b>−0.18 (−0.12)</b>	<b>−2.33 (2.83)</b>	<b>0.02 (0.005)</b>	<b>[−0.32, −0.03]</b> <b>([−0.20, −0.04])</b>	0.03 (0.05)	0.35 (0.79)	0.73 (0.43)	[−0.13, 0.17] ([−0.09, 0.18])	−0.05 (0.08)	−0.75 (1.94)	0.45 (0.053)	[−0.19, 0.09] ([−0.0003, 0.16])
Time	<b>−0.14</b>	<b>−4.63</b>	<b>&lt;0.001</b>	<b>[−0.20, −0.08]</b>	<b>−0.10</b>	<b>−3.20</b>	<b>0.001</b>	<b>[−0.16, −0.04]</b>	<b>−0.26</b>	<b>−9.11</b>	<b>&lt;0.001</b>	<b>[−0.32, −0.21]</b>
Greed × Time interaction	−0.001 (0.03)	−0.05 (1.79)	0.96 (0.07)	[−0.06, 0.06] ([−0.003, 0.07])	−0.005 (0.01)	−0.15 (0.28)	0.88 (0.78)	[−0.07, 0.06] ([−0.05, 0.07])	−0.04 (−0.04)	−1.30 (−1.86)	0.20 (0.06)	[−0.09, 0.02] ([−0.07, 0.002])
Greed × Self-esteem × Time interaction	<b>0.07 (0.04)</b>	<b>2.53 (2.41)</b>	<b>0.01 (0.02)</b>	<b>[0.01, 0.12]</b> <b>([0.01, 0.07])</b>	−0.02 (−0.03)	−0.75 (−0.99)	0.45 (0.32)	[−0.07, 0.03] ([−0.08, 0.02])	0.02 (−0.03)	0.86 (−1.72)	0.39 (0.09)	[−0.03, 0.07] ([−0.07, 0.004])

Note: For authentic and hubristic pride, numbers in parentheses refer to the coefficient controlling for positive affect, pleasantness, and activation. For positive affect, numbers in parentheses control for authentic pride. All coefficients are standardized regression coefficients. Bolded values indicate statistical significance,  $p < 0.05$ .

at acquisition, nor a three-way interaction with greed, self-esteem, and time. We next added materialism and an interaction between materialism and time to the model. No significant effect of materialism emerged on hubristic pride,  $\beta=0.11$ ,  $t(468)=1.10$ ,  $p=0.27$ , 95% CI=[−0.11, 0.29], nor was there a significant interaction between materialism and time,  $\beta=0.01$ ,  $t(512)=0.29$ ,  $p=0.77$ , 95% CI=[−0.08, 0.03].

### 5.3 | Discussion

In contrast to the results of Study 1, Study 2 did not find a boost in authentic or hubristic pride in response to new acquisitions, or a sharper decline in either facet of pride over time, among greedy people. However, the expected effects on authentic pride did emerge for greedy people low in self-esteem, as predicted in our preregistration and observed in Study 1. The absence of main effects in Study 2 may be due to the fact that its undergraduate sample reported significantly lower levels of authentic,  $M=2.20$ ,  $SD=0.82$ , and hubristic pride,  $M=1.28$ ,  $SD=0.41$ , in their new acquisitions, compared to Study 1's adult sample,  $M_{\text{Authentic pride}}=2.97$ ,  $SD=1.04$ ,  $t=-9.95$ ,  $d=0.82$ ,  $p<0.001$ ;  $M_{\text{Hubristic pride}}=1.50$ ,  $SD=0.75$ ,  $t=-4.54$ ,  $d=0.36$ ,  $p<0.001$ . This difference could be a result of weaker associations between acquisitions and one's self-concept among undergraduates, compared to older adults. Nonetheless, the hypothesized pattern of authentic pride responses was observed for greedy individuals with low self-esteem, suggesting that for these undergraduates, new acquisitions may result in the same emotional responses as they do in greedy adults.

As for hubristic pride, the very low mean level observed here might have prevented us from capturing a decline after acquisition, due to a floor effect. Alternatively, the decline in hubristic pride observed in Study 1 might be spurious, as it was unpredicted and not observed in Study S1.

It is noteworthy that although this study did not replicate the main effect of greed on authentic pride in acquisitions, it did replicate the predicted interactions between greed and self-esteem on authentic pride at acquisition and after owning the item for some time. Overall, Studies S1, 1, and 2 suggest that greedy individuals respond to new acquisitions with bursts of authentic pride that decline soon after, but in some samples, this pattern is more pronounced or only apparent among greedy individuals with low self-esteem. While there is some evidence that greedy individuals also experience a boost in hubristic pride, it remains unclear whether this boost is unique to acquisition experiences, or symptomatic of a broader tendency to feel greater hubristic pride across situations.

Given the inconsistency between the results of Studies 1 and 2, Study 3 was designed to accumulate more evidence about greedy people's emotional reactions to acquisitions with a larger and therefore more highly powered sample of adults.

## 6 | STUDY 3

In Study 3, we preregistered three predictions (<https://bit.ly/3ye7Hsw>), aimed at replicating the key results that had emerged in the prior studies: (1) greedy people will feel a short-lived boost of authentic pride in response to acquisitions, (2) this boost in authentic pride will hold controlling for positive affect, and (3) the boost and drop in authentic pride will be moderated by self-esteem, such that greedy people with low self-esteem report a more intense boost in authentic pride at acquisition and a steeper drop thereafter.

This study also addressed another question in an exploratory manner: Are greedy people's emotional responses to acquisitions unique to *acquisition*, or might they occur more broadly to other kinds of events that are also likely to elicit pride, such as making progress toward a personal goal. To do so, we asked participants to indicate whether they engaged in various other activities, including achievements that tend to elicit pride across individuals, in each daily survey. We did not preregister predictions about these analyses, so report them as *Exploratory Analyses* below.

### 6.1 | Method

#### 6.1.1 | Participants

To calculate sample size, we used the InteractionPowerR package in R (Baranger, 2021). We aimed to obtain 80% power to detect an interaction between greed and self-esteem on the decline in authentic pride since acquisition of size  $r=-0.10$  at the final time point in this study. We determined this effect size based on the results of Studies 1 and 2. This power analysis suggested a sample size of 700 participants at the final assessment, so we aimed to recruit 1000 participants who made a purchase during their time in the study, to prepare for attrition by the final assessment. In total, 3580 American participants recruited through MTurk completed the initial survey and were emailed daily surveys for the following week, and 1082 of these participants went on to make a purchase during that week. Of the 1082 participants who made purchases, 897 participants completed all assessments (67% female, age range=18–84, median=36, 83% of those who made

purchases). Participants were paid \$0.25 for Part 1, an additional \$0.25 for each daily survey, and \$0.50 for each follow-up survey about purchases made during the week of the study.

### 6.1.2 | Procedure

Participants began the study by completing the Dispositional Greed Scale (Seuntjens, Zeelenberg, van de Ven, et al., 2015;  $\alpha=0.83$ ), the Rosenberg Self-Esteem Scale (Rosenberg, 1965;  $\alpha=0.93$ ), and the Material Values Scale (Richins, 2004;  $\alpha=0.87$ ). Participants also reported their trait-level proneness to authentic and hubristic pride (Tracy & Robins, 2007;  $\alpha_{\text{Authentic pride}}=0.93$ ;  $\alpha_{\text{Hubristic pride}}=0.91$ ), positive and negative affect (Watson et al., 1988;  $\alpha_{\text{PA}}=0.91$ ;  $\alpha_{\text{NA}}=0.92$ ), and pleasantness (Feldman-Barrett & Russell;  $\alpha=0.88$ ) by reporting how often they feel each of these emotions in general in their daily life. We omitted the measure of activation from this study due to low reliability in the prior studies.

Beginning the following day, participants were emailed surveys every evening for the next week around 5 p.m. PST that asked them to indicate each activity they participated in that day from a list of nine activities (see materials for the full list: [bit.ly/3Si0KA1](https://bit.ly/3Si0KA1)). The focal activity was “made a non-essential purchase for yourself (i.e., something that you wanted but did not need) that cost \$50 or more,” but participants also indicated whether they engaged in other common activities such as “made progress on a professional/academic goal, or achieved success on a professional/academic goal,” “got in a fight/disagreement with someone,” and “spent time with friends and/or family.” We raised the cost requirement to \$50 in this study because we were concerned that lowering it to \$25 in Study 2 might have contributed to the absence of a significant effect of greed on authentic pride in that study. We opted not to raise it to \$100—where it was set in Study 1—to better enable the recruitment of a large enough sample to test Study 3’s predicted three-way interaction between greed, self-esteem, and time.

If participants indicated that they made a nonessential purchase that day, they were directed to a questionnaire where they reported the purchased item, its cost, and their emotions about the item upon acquisition using the same measures as in the prior studies ( $\alpha_{\text{Authentic pride}}=0.91$ ,  $\alpha_{\text{Hubristic pride}}=0.90$ ,  $\alpha_{\text{PA}}=0.91$ , and  $\alpha_{\text{NA}}=0.88$ ,  $\alpha_{\text{Pleasantness}}=0.76$ ). If they did not indicate making a nonessential purchase, they reported their general emotional state that day ( $\alpha_{\text{Authentic pride}}=0.94$ ,  $\alpha_{\text{Hubristic pride}}=0.88$ ,  $\alpha_{\text{PA}}=0.93$ , and  $\alpha_{\text{NA}}=0.91$ ,  $\alpha_{\text{Pleasantness}}=0.88$ ). All participants who indicated making a purchase were sent follow-up surveys 1 week and 2 weeks later that asked them to report

their current feelings about the purchased item ( $\alpha_{\text{Authentic pride}}=0.95$ ,  $\alpha_{\text{Hubristic pride}}=0.89$ ,  $\alpha_{\text{PA}}=0.95$ ,  $\alpha_{\text{NA}}=0.89$ ,  $\alpha_{\text{Pleasantness}}=0.77$ ,  $\alpha_{\text{Pleasantness}}=0.77$ ).

## 6.2 | Results

Participants purchased a range of items: apparel (28%), experiences (20%), electronics (17%), home improvements (15%), nonelectronic leisure (9%), health and beauty (7%), and automotive (1%); the remaining 3% of purchases did not fit into any of these categories or were not clearly indicated by participants. The cost of purchases ranged from \$50 to \$6500 with a median of \$72.

Descriptive statistics and correlations among all trait-level variables are reported in Table S8 in SOM3. Data from all time points were combined into a multi-level model with observations nested within participants. We conducted two linear mixed-effects models in which authentic or hubristic pride, respectively, was regressed onto greed, time, and an interaction term between greed and time, controlling for the cost of the purchase. To test for self-esteem moderation, we also added self-esteem, an interaction between greed and self-esteem, and a three-way interaction between greed, self-esteem, and time to each model. In each model, we included a random intercept for participant and a random slope of greed. These models include all participants who completed at least one follow-up survey; participants who did not complete either follow-up were removed using listwise deletion.

Replicating Study 1 and supporting our preregistered hypotheses, greedy people experienced a boost of authentic pride at acquisition, and these feelings faded significantly more over the following 2 weeks compared to people low in greed (see Table 3). In addition, both of these effects held controlling for positive affect and pleasantness. As in Studies 1 and 2, we conducted the same analyses but treating positive affect as the response variable, and, after controlling for authentic pride, we did not observe a significant main effect of greed on positive affect or an interaction between greed and time predicting a decline in positive affect (see Table 3 and SOM2 for results of models predicting negative affect, pleasantness, and activation). However, in contrast to our preregistered hypotheses, we did not observe interactions with self-esteem for either the boost or the drop in authentic pride. We next added materialism and an interaction between materialism and time to the model. No effect of materialism emerged on authentic pride at acquisition,  $\beta=0.06$ ,  $t(1178)=1.19$ ,  $p=0.23$ , 95% CI=[−0.04, 0.15], nor was there a significant interaction between materialism and time,  $\beta=-0.005$ ,  $t(1380)=-0.21$ ,  $p=0.83$ , 95% CI=[−0.02, 0.04].

TABLE 3 Mixed effects models for both facets of pride across time, Study 3.

Coefficient	Authentic pride				Hubristic pride				Positive affect			
	$\beta$	$t$	$p$	95% CI	$\beta$	$t$	$p$	95% CI	$\beta$	$t$	$p$	95% CI
(Intercept)	0.07	2.20	0.03	[0.01, 0.13]	0.002	0.07	0.95	[−0.06, 0.06]	0.13	3.97	<0.001	[0.06, 0.19]
Greed	0.13 (0.05)	4.03 (3.54)	<0.001 (<0.001)	[0.07, 0.20] ([0.02, 0.08])	0.19 (0.18)	6.48 (6.48)	<0.001 (<0.001)	[0.13, 0.24] ([0.13, 0.23])	0.10 (−0.02)	2.87 (−1.03)	0.004 (0.30)	[0.03, 0.16] ([−0.05, 0.02])
Self-esteem	0.33	10.36	<0.001	[0.27, 0.39]	−0.06	−1.96	0.051	[−0.12, 0.0004]	0.25	7.86	<0.001	[0.19, 0.32]
Cost	0.10	3.73	<0.001	[0.05, 0.16]	0.03	0.19	0.85	[−0.03, 0.03]	0.09	3.25	0.001	[0.04, 0.14]
Greed × Self-esteem interaction	−0.03 (0.01)	−0.85 (0.70)	0.39 (0.49)	[−0.09, 0.03] ([−0.02, 0.04])	−0.02 (−0.02)	−0.70 (−0.74)	0.48 (0.46)	[−0.07, 0.03] ([−0.07, 0.03])	−0.04 (−0.02)	−1.45 (−1.57)	0.15 (0.12)	[−0.10, 0.02] ([−0.05, 0.01])
Time	−0.08	−5.52	<0.001	[−0.11, −0.05]	−0.02	−1.34	0.18	[−0.05, 0.01]	−0.16	−10.68	<0.001	[−0.19, −0.13]
Greed × Time interaction	−0.04 (−0.02)	−2.29 (−2.22)	0.02 (0.03)	[−0.07, −0.01] ([−0.04, −0.002])	−0.005 (−0.005)	−0.37 (−0.36)	0.71 (0.72)	[−0.03, 0.02] ([−0.03, 0.02])	−0.02 (0.01)	−1.01 (1.57)	0.31 (0.12)	[−0.05, 0.01] ([−0.004, 0.03])
Greed × Self-esteem × Time interaction	0.01 (0.01)	0.65 (1.07)	0.51 (0.29)	[−0.02, 0.03] ([−0.01, 0.02])	−0.001 (−0.003)	−0.11 (−0.22)	0.91 (0.83)	[−0.03, 0.02] ([−0.03, 0.02])	0.002 (−0.005)	0.16 (−0.58)	0.88 (0.56)	[−0.02, 0.03] ([−0.02, 0.01])

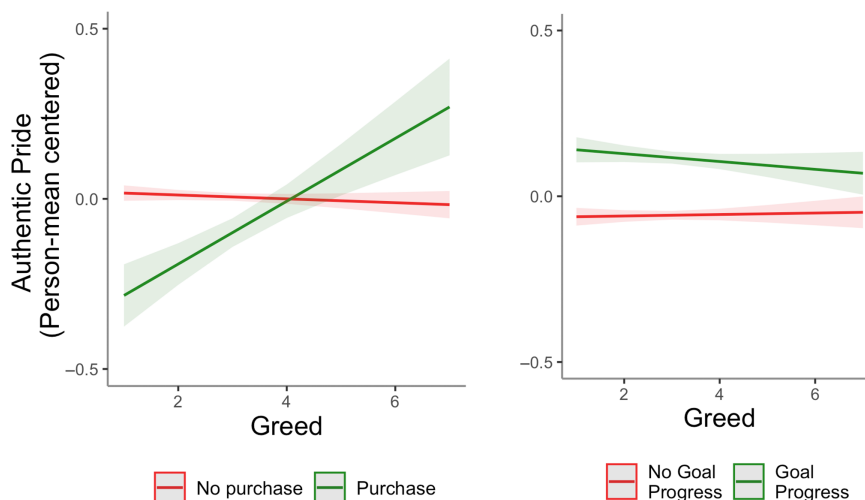
Note: For authentic and hubristic pride, numbers in parentheses refer to the coefficient controlling for positive affect and pleasantness. For positive affect, numbers in parentheses control for authentic pride. All coefficients are standardized regression coefficients. Bolded values indicate statistical significance,  $p < 0.05$ .

We also found that greedy people felt significantly greater hubristic pride in their purchases at acquisition than less greedy people. However, no interaction emerged between greed and time, indicating that greedy people's hubristic pride in their purchases did not decline significantly more than less greedy people's hubristic pride. The effect of greed on hubristic pride at acquisition was robust to controlling for positive affect and pleasantness. We next added materialism and an interaction between materialism and time to the model. There was no effect of materialism on hubristic pride,  $\beta = 0.03$ ,  $t(1255) = 0.80$ ,  $p = 0.42$ , 95% CI = [−0.04, 0.10], nor a significant interaction between materialism and time,  $\beta = 0.001$ ,  $t(1452) = 0.06$ ,  $p = 0.95$ , 95% CI = [−0.04, 0.04].

### 6.2.1 | Exploratory analyses

We next sought to determine the specificity of greedy people's pride responses to acquisitions by comparing their emotional responses to purchases to their emotional responses to another pride-eliciting activity: goal progress. Recall that participants had been asked on each daily assessment to not only report on any acquisitions they had made, but also several other common activities, including making progress toward a professional or academic goal. This design feature allowed us to determine whether both acquisitions and goal progress were associated with within-person boosts in authentic and hubristic pride, relative to participants' personal average level of each facet of pride. By testing this possibility for both purchases and goal progress, we can determine whether greedy people's boost in pride in response to purchases is specific to acquisitions or better reflects a general response tendency among greedy people to any event likely to elicit pride.

We began by conducting a regression model in which person-centered authentic pride was regressed onto greed, a binary variable indicating whether participants made a purchase that day or not, and an interaction between greed and this binary variable. We also included a random intercept for participant and a random slope for greed. Results revealed a significant main effect of making a purchase,  $\beta = -0.22$ ,  $t(7945) = -4.57$ ,  $p < 0.001$ , 95% CI = [−0.31, −0.12], indicating that participants generally felt lower-than-average authentic pride on days when they made a nonessential purchase compared to days when they did not. We also found a significant interaction,  $\beta = 0.24$ ,  $t(7945) = 5.11$ ,  $p < 0.001$ , 95% CI = [0.15, 0.33]. Decomposing this interaction indicated that, consistent with our prior results, compared to people low in greed, greedy people felt significantly *greater* authentic pride, relative to their personal average, on days when they made a purchase,  $\beta = 0.23$ ,  $t(7945) = 4.98$ ,  $p < 0.001$ , 95%



**FIGURE 3** Left: Interaction showing the relationship between greed and person-centered authentic pride on days when participants made nonessential purchases compared to days when they did not. Right: Same interaction for days of goal progress. Fans around regression lines represent the standard error. Plots were created using the sjPlot package in R (Lüdtke, 2021).

CI=[0.14, 0.31]. In contrast, on days when participants did not make a nonessential purchase, there was no difference in person-centered authentic pride based on greed,  $\beta = -0.01$ ,  $t(7945) = -1.14$ ,  $p = 0.25$ , 95% CI=[-0.04, 0.01] (see Figure 3).

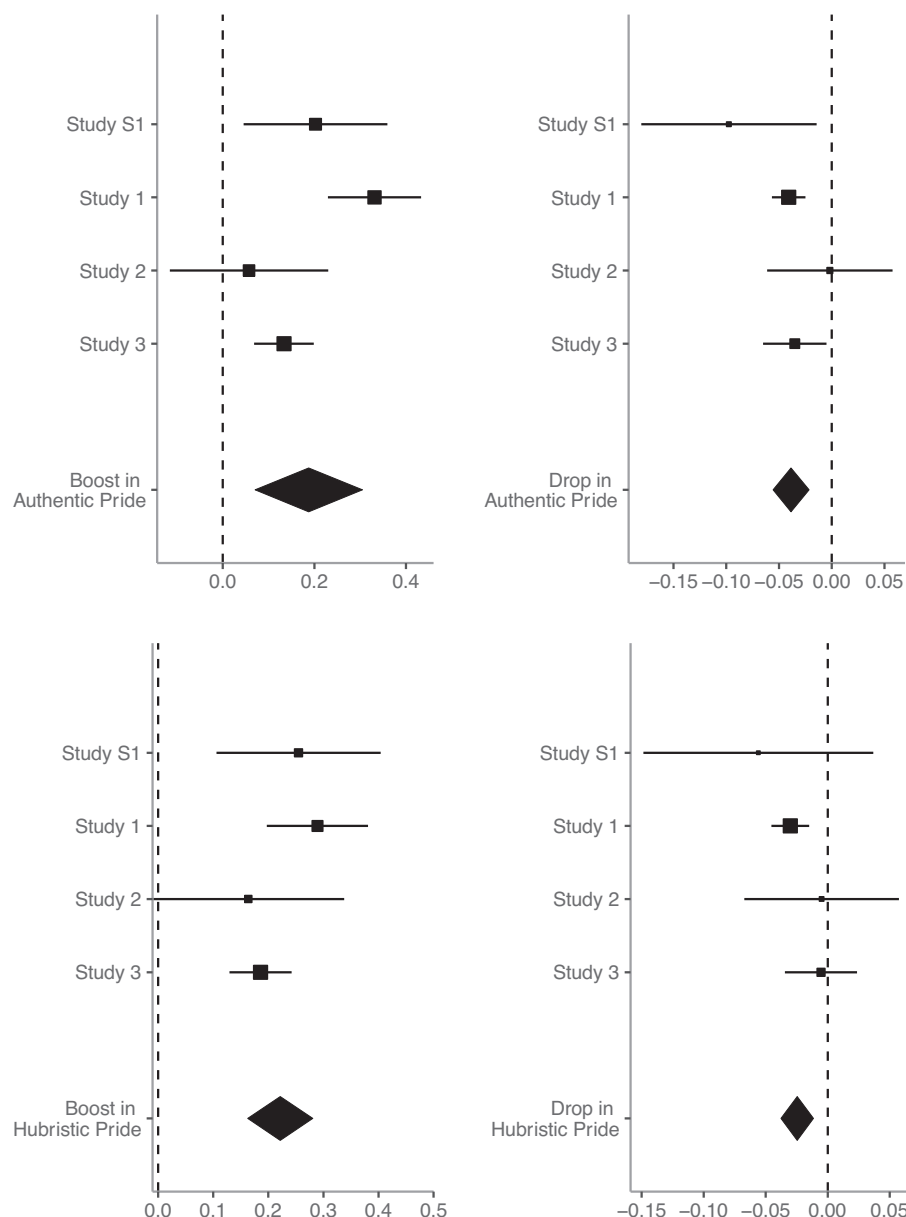
We next repeated this same model for goal progress. We found a main effect of goal progress,  $\beta = 0.37$ ,  $t(7823) = 15.29$ ,  $p < 0.001$ , 95% CI=[0.33, 0.42], indicating that participants, in general, felt greater-than-average authentic pride on days when they made progress toward a goal compared to days when they did not. However, we did not find a significant effect of greed,  $\beta = 0.005$ ,  $t(7823) = 0.38$ ,  $p = 0.70$ , 95% CI=[-0.02, 0.03], indicating that greedy people did not experience a distinctive boost in authentic pride on days when they made progress toward a goal. There also was no interaction,  $\beta = -0.03$ ,  $t(7823) = -1.40$ ,  $p = 0.16$ , and 95% CI=[-0.08, 0.01], indicating no difference in authentic pride based on greed on days when participants did versus did not make progress toward a goal (see Figure 3).

Overall, these analyses suggest that making a nonessential purchase is a distinctive way in which greedy people can elicit elevated feelings of authentic pride, compared to their average feelings, and this does not occur for people low in greed. Indeed, a main effect of acquisitions on authentic pride indicated a general tendency to feel lower-than-average authentic pride on days of acquiring, but greedy people showed the opposite pattern. In contrast, greedy people showed identical authentic pride responses to goal progress as did people low in greed; we observed a general tendency for participants to feel greater authentic pride on days when they made goal progress compared to days when they did not, and greedy people were no

different in this regard. These results further support our theoretical proposal that greedy people's tendency to feel short-lived boosts of authentic pride in response to acquisitions is a distinct emotional process underpinning their chronic and insatiable desire to acquire.

We next repeated these analyses for hubristic pride, beginning with the model for acquisitions. In contrast to what was observed for authentic pride, we did not find a main effect of greed,  $\beta = -0.005$ ,  $t(7945) = -0.41$ ,  $p = 0.69$ , 95% CI=[-0.03, 0.02], nor an interaction,  $\beta = 0.05$ ,  $t(7945) = 1.23$ ,  $p = 0.22$ , 95% CI=[-0.03, 0.14], indicating that greedy people did not deviate from their personal average level of hubristic pride on days when they made purchases, and this same pattern was observed for days when they did not make purchases. Likewise, in the model for goal progress, we again found a null main effect of greed,  $\beta = -0.01$ ,  $t(7823) = -0.74$ ,  $p = 0.46$ , 95% CI=[-0.04, 0.02], and no interaction,  $\beta = 0.03$ ,  $t(7823) = 1.20$ ,  $p = 0.23$ , 95% CI=[-0.02, 0.07]. As a result, these analyses suggest that neither purchases nor goal progress provide greedy people with boosts in hubristic pride relative to their average feelings. The elevated, and seemingly durable, hubristic pride that greedy people reported about their acquisitions across studies, therefore does not seem to represent a distinctive emotional response to acquisition.

In summary, these results further support the notion that the dynamic shifts in authentic pride observed in these studies reflect the emotional process that might drive greedy acquisition, and what was observed for hubristic pride better represents a stable emotional tendency. This conclusion is consistent with research demonstrating that greed shares a conceptual core with other "dark traits" like narcissism, psychopathy, and Machiavellianism



**FIGURE 4** Internal meta-analyses for the boost and drop in authentic pride (top) and hubristic pride (bottom) following self-purchased acquisitions, across Studies S1, 1, 2, and 3. All coefficients are standardized regression coefficients.

(Moshagen et al., 2018), all of which are positively associated with trait-level hubristic pride (Mercadante & Tracy, 2022).

## 7 | GENERAL DISCUSSION

This research investigates greedy people's emotional responses to new acquisitions. Across four studies (one of which is reported in the SOM only, due to space limitations), we found that people high in greed felt a boost of authentic pride in response to new acquisitions, and these feelings faded shortly afterward. Given that Study 2 showed a slightly different pattern—such that this

dynamic emerged only for greedy people low in self-esteem (an effect consistent with preregistered predictions)—we conducted internal meta-analyses across all four studies. These showed significant evidence for both the boost,  $\beta = 0.19$ , 95% CI = [0.12, 0.27], and drop,  $\beta = -0.04$ , 95% CI = [-0.06, -0.02], in authentic pride across studies (see Figure 4). The effect size of the boost corresponds to a medium-sized effect in individual-differences research, whereas the size of the drop is quite small for this area of research (Gignac & Szodorai, 2016). Supporting our theory, the effects of authentic pride in each study held controlling for shared variance with positive affect, pleasantness, and activation felt from acquisition; furthermore, after controlling for shared variance with authentic pride,

there was no effect of greed on positive affect, pleasantness, or activation in any study.

We next conducted these same meta-analyses for the boost and drop in hubristic pride. These also showed significant evidence for both a boost,  $\beta = 0.22$ , 95% CI = [0.16, 0.27], and drop,  $\beta = -0.02$ , 95% CI = [-0.04, -0.01], in hubristic pride. That said, despite the significant effects, we believe that the interpretation of these results requires greater caution than the corresponding meta-analytic estimates for authentic pride, for several reasons. Most notably, the significant drop in hubristic pride that emerged in Study 1 was the result of an exploratory (i.e., not preregistered) analysis, and was not replicated in any other study, nor did we ever preregister the prediction that this effect would emerge. Furthermore, there is also reason to be skeptical about the meta-analytic boost in hubristic pride, because greedy people show a stronger dispositional proneness to hubristic pride across situations. In Study 3, greedy people were found to be dispositionally lower in authentic pride ( $r = -0.07$ ,  $p < 0.001$ ), and higher in hubristic pride ( $r = 0.43$ ,  $p < 0.001$ ; see Table S8 in SOM3) compared to those low in greed. The boost of authentic pride these individuals experience upon acquisition is therefore particularly noteworthy, because this effect works against their general tendency to feel less authentic pride than people low in greed. In contrast, the boost in hubristic pride is partly driven by greedy people's elevated proneness to hubristic pride, such that the true effect size is likely to be considerably smaller than that shown in Figure 4. Supporting this expectation, controlling for trait hubristic pride in Study 3 decreased the magnitude of the effect of greed on hubristic pride at acquisition by almost half ( $\beta = 0.19$  to  $\beta = 0.12$ ).

In addition, follow-up exploratory analyses from Study 3 support the notion that authentic pride is the more distinctive response to acquisition among greedy people. Specifically, we observed a within-person boost in authentic pride among greedy people on days they made purchases, such that they felt significantly greater authentic pride on those days compared to their personal average; this effect did not emerge for people low in greed. In contrast, on days when participants made progress toward an important goal, another pride-eliciting event, there was no distinctive boost in authentic pride among those high in greed. There was also no specific within-person boost in hubristic pride among greedy people in response to acquisitions or goal progress. These findings suggest that greedy people tend to feel elevated authentic pride, specifically, in response to acquisitions, but not more generally. Moreover, the elevated hubristic pride greedy people report in this situation is more likely to reflect these individuals' average emotional state.

These findings therefore suggest that greedy people's self-esteem might be contingent on their ability to acquire desirable possessions. Authentic pride, in this view, is similar to "state self-esteem," as it is a transient emotional experience that engenders the same kinds of self-evaluations that constitute high self-esteem (Tracy & Robins, 2004). Greedy people's tendency to respond to acquisitions with elevated authentic pride can thus be interpreted to mean that acquisition experiences momentarily boost their self-esteem. Furthermore, given that these feelings do not seem to last long after the acquisition event, it is possible that greedy people soon seek to acquire again, to feel more authentic pride. This dynamic emotional response pattern might therefore help explain greedy people's defining characteristic: their insatiable desire to acquire more. However, given that the present studies did not directly test whether the desire for pride is causally related to greedy people's acquisitiveness, more research is necessary to address this issue.

The elevated hubristic pride that greedy people report in response to acquisitions, in contrast, reflects a general tendency toward hubristic pride across contexts, consistent with the positive relationship between greed and trait-level hubristic pride found in Study 3 (see Table S8 in SOM3). These feelings are unlikely to propel greedy people to make subsequent purchases, and thus unlikely to be the critical emotional tendency that underlies greedy individuals' pervasive acquisitiveness.

Although these conclusions emerged fairly robustly from the present results, these studies suffered from limitations that should be addressed in future research. First, the interactions between greed and self-esteem predicting the boost and the drop in authentic pride did not emerge in Study 3, which had the strongest statistical power to test these interactions. More research is therefore necessary to determine whether the process uncovered in this research is experienced more intensely by greedy people with low self-esteem. We theorized that one reason for greedy individuals' drive for acquisition is that acquiring new possessions elicits feelings of authentic pride, suggesting that greedy people with low self-esteem might reap the greatest emotional benefits from this process, as they start with lower baseline levels of authentic pride. Future research exploring the conscious motivations for acquisitions among greedy people with low self-esteem might help determine whether they are aware of this dynamic and seek acquisitions for the explicit purpose of eliciting authentic pride.

In addition, the high degree of multicollinearity between the measures of greed and materialism used in these studies is a limitation of the models including both variables in Studies 2 and 3. As a result, our ability to control for materialism and isolate the specific effect of greed

is limited, and materialism shows a similar, though not identical, pattern of results in Studies 2 and 3 when we conduct our models with materialism as the focal variable instead of greed (see SOM5). For example, consistent with the effects of greed, in Study 3, we observed evidence of materialism predicting a boost and drop in authentic pride, but only after controlling for positive affect and pleasantness (notably, for greed, these effects emerged regardless of whether positive affect and pleasantness were included as covariates). However, there are also important differences in the results for greed and materialism. We did not observe significant interactions between materialism and self-esteem in Study 2, but found these interactions for greed, consistent with our preregistered predictions. In that study, materialism also predicted a boost in positive affect upon acquisition, whereas greed did not. Furthermore, we observed an interaction between materialism and time predicting positive affect in Study 2, indicating that materialistic people's positive affect about their purchase increased over time. This interaction was replicated in Study 3 after controlling for authentic pride, but no such interactions emerged for greed. These effects suggest that materialistic people grow to feel more positive about their possessions once they own them, in stark contrast to the decline in authentic pride that greedy people experience after acquisition. Future research might explore this possibility.

Moreover, our theoretical model was developed on the basis of a critical theoretical distinction between greed and materialism: self-satisfaction versus impression management. Greedy people are thought to amass wealth primarily to fulfill an internal desire to acquire more, and to mitigate their dissatisfaction with never having enough (Seuntjens, Zeelenberg, Breugelmans, et al., 2015; Seuntjens, Zeelenberg, van de Ven, et al., 2015). In contrast, materialistic people are thought to amass and display wealth, at least in part, to gain status in the eyes of others (Richins, 2017); in fact, one facet of materialism, "possession defined success," is "the tendency to gauge the success of oneself and of others by possessions" (Richins, 2017, p. 481). This distinction highlights another potential future research direction: studies might test the prediction that greedy people are especially focused on the acquisition process and less concerned with the purchased item itself, whereas materialistic people show the opposite pattern.

Another limitation of these studies is that all of the acquisitions were self-made purchases, so it remains unclear whether greedy people would show the same emotional response pattern to acquisitions that they do not purchase for themselves, such as gifts received from others. One possibility is that greedy people experience

a brief boost in authentic pride only if they buy the item themselves, which would suggest that their acquisition pride is driven in part by the act of doing it for themselves. Alternatively, if these individuals are driven by a broad desire to acquire regardless of how those acquisitions occur, then they may feel authentic pride in response to any and all acquisitions, including those they receive as gifts. Future research comparing greedy people's emotional responses to purchases and gifts would therefore provide greater insight into the specific appraisals that elicit authentic pride among greedy people in response to acquisition.<sup>4</sup>

A final important future direction is to examine whether low authentic pride *causes* greedy people to seek new acquisitions. Given the present finding that acquisitions engender a short-lived boost of authentic pride among these individuals, it is plausible that they would become particularly likely to seek out acquisitions when in need of pride feelings (i.e., when feeling low in self-esteem).

In conclusion, this research provides the first evidence of a dynamic emotional process that is distinctively associated with greedy individuals' responses to acquisitions, and therefore might contribute to the uniquely acquisitive character of these individuals. Findings suggest that greedy individuals differ from those low in greed in their tendency to feel short-lived boosts of authentic pride in response to acquisition, raising the possibility that the brevity of this emotional reward serves as reinforcement that, in part, underlies greedy people's constant desire to acquire more and their simultaneous dissatisfaction with never having enough.

## AUTHOR CONTRIBUTIONS

*Conceptualization:* Eric J. Mercadante and Jessica L. Tracy. *Methodology:* Eric J. Mercadante and Jessica L. Tracy. *Formal analysis:* Eric J. Mercadante. *Investigation:* Eric J. Mercadante. *Writing—original draft:* Eric J. Mercadante. *Writing—review and editing:* Eric J. Mercadante and Jessica L. Tracy. *Supervision:* Jessica L. Tracy.

## ACKNOWLEDGEMENTS

We would like to acknowledge the generous support for the Social Sciences and Humanities Research Council of Canada.

## FUNDING INFORMATION

This research was funded by the Social Sciences and Humanities Research Council of Canada (435-2018-0154).

## CONFLICT OF INTEREST STATEMENT

We have no conflicts of interest to disclose.

## ETHICS STATEMENT

This research was approved by the Behavioral Research Ethics Board at the University of British Columbia (ID H18-00051).

## ORCID

Eric J. Mercadante  <https://orcid.org/0000-0001-8720-2657>

## ENDNOTES

<sup>1</sup> Please note that this OSF link was created for the purpose of anonymizing our preregistration documents for Studies S1, 1, and 2 for peer review, so the dates listed next to each of these preregistration documents do not reflect when we originally posted these documents on the OSF website. For Study 3, we made sure not to include any identifying information on the preregistration documents, so the dates listed with those preregistration documents are accurate to when they were originally posted.

<sup>2</sup> Participants also forecasted how they expected to feel about the purchase in 2 weeks and 1 month, to explore whether people make accurate affective forecasts about their future feelings. These results address a different research question so are not reported here, but the data for these items are included on OSF. These forecasting items were also included in Study 3.

<sup>3</sup> We had planned to recruit a smaller sample size when we originally preregistered this study (<https://bit.ly/3yBYpId>). After running the study for several weeks, we realized that participants were less likely to make a purchase during their time in the study than we had expected, so we uploaded a preregistration amendment with this updated planned sample size (<https://bit.ly/3AqGRK>).

<sup>4</sup> We conducted a preliminary study addressing this question, described in detail in SOM8, which found that greedy people report an equivalent boost in authentic pride upon making a purchase and receiving a gift, and this effect held controlling for positive affect, pleasantness, and activation. However, we did not find evidence of a drop in authentic pride after acquiring a gift. Given the limitations of this study (see SOM8), more research is needed before we can draw strong conclusions, but these results tentatively suggest that greedy individuals experience the same boost in authentic pride following gifted acquisitions as they do for self-made purchases.

## REFERENCES

- Baranger, D. (2021). InteractionPoweR: Power analysis for interactions via simulation. R package version 0.1.0.4. <https://dbaranger.github.io/InteractionPoweR>
- Dickens, L. R., & Robins, R. W. (2022). Pride: A meta-analytic project. *Emotion*, 22(5), 1071–1087.
- Feldman Barrett, L., & Russell, J. A. (1998). Independence and bipolarity in the structure of current affect. *Journal of Personality and Social Psychology*, 74(4), 967–984.
- Gignac, G. E., & Szodorai, E. T. (2016). Effect size guidelines for individual differences researchers. *Personality and Individual Differences*, 102, 74–78.
- Gilliland, S. W., & Anderson, J. S. (2014). On the psychology of greed. In J. K. Ford, J. R. Hollenbeck, & A. M. Ryan (Eds.), *The nature of work: Advances in psychological theory, methods, and practice* (pp. 99–116). American Psychological Association.
- Krekels, G., & Pandelaere, M. (2015). Dispositional greed. *Personality and Individual Differences*, 74, 225–230.
- Lüdtke, D. (2021). *sjPlot: Data visualization for statistics in social science*. R package version 2.8.12. <https://CRAN.R-project.org/package=sjPlot>
- Mercadante, E. J., & Tracy, J. L. (2022). A paradox of pride: Hubristic pride predicts strategic dishonesty in response to status threats. *Journal of Experimental Psychology: General*, 151(7), 1681–1706.
- Moshagen, M., Hilbig, B. E., & Zettler, I. (2018). The dark core of personality. *Psychological Review*, 125(5), 656–688.
- Mussel, P., de Vries, J., Spengler, M., Frintrup, A., Ziegler, M., & Hewig, J. (2022). The development of trait greed during young adulthood: A simultaneous investigation of environmental effects and negative core beliefs. *European Journal of Personality*, 37(3), 08902070221090101.
- Mussel, P., Rodrigues, J., Krumm, S., & Hewig, J. (2018). The convergent validity of five dispositional greed scales. *Personality and Individual Differences*, 131, 249–253.
- Nenkov, G. Y., Morrin, M., Ward, A., Schwartz, B., & Hulland, J. (2008). A short form of the maximization scale: Factor structure, reliability and validity studies. *Judgment and Decision Making*, 3(5), 371–388.
- Parkinson, B., Briner, R. B., Reynolds, S., & Totterdell, P. (1995). Time frames for mood: Relations between momentary and generalized ratings of affect. *Personality and Social Psychology Bulletin*, 21(4), 331–339.
- Richins, M. L. (2004). The material values scale: Measurement properties and development of a short form. *Journal of Consumer Research*, 31(1), 209–219.
- Richins, M. L. (2017). Materialism pathways: The processes that create and perpetuate materialism. *Journal of Consumer Psychology*, 27(4), 480–499.
- Robinson, M. D., & Clore, G. L. (2002). Episodic and semantic knowledge in emotional self-report: Evidence for two judgment processes. *Journal of Personality and Social Psychology*, 83(1), 198–215.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press.
- Schönbrodt, F. D., & Perugini, M. (2013). At what sample size do correlations stabilize? *Journal of Research in Personality*, 47(5), 609–612.
- Seuntjens, T. G., Zeelenberg, M., Breugelmans, S. M., & van de Ven, N. (2015). Defining greed. *British Journal of Psychology*, 106(3), 505–525.
- Seuntjens, T. G., Zeelenberg, M., van de Ven, N., & Breugelmans, S. M. (2015). Dispositional greed. *Journal of Personality and Social Psychology*, 108(6), 917–933.
- Tracy, J. L., Cheng, J. T., Robins, R. W., & Trzesniewski, K. H. (2009). Authentic and hubristic pride: The affective core of self-esteem and narcissism. *Self and Identity*, 8(2–3), 196–213.
- Tracy, J. L., & Robins, R. W. (2004). Putting the self into self-conscious emotions: A theoretical model. *Psychological Inquiry*, 15(2), 103–125.

- Tracy, J. L., & Robins, R. W. (2007). The psychological structure of pride: A tale of two facets. *Journal of Personality and Social Psychology*, 92(3), 506–525.
- Wang, L., Malhotra, D., & Murnighan, J. K. (2011). Economics education and greed. *Academy of Management Learning & Education*, 10(4), 643–660.
- Wang, L., & Murnighan, J. K. (2011). On Greed. *Academy of Management Annals*, 5(1), 279–316.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063–1070.
- Weidman, A. C., & Dunn, E. W. (2016). The unsung benefits of material things: Material purchases provide more frequent momentary happiness than experiential purchases. *Social Psychological and Personality Science*, 7(4), 390–399.

## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

**How to cite this article:** Mercadante, E. J., & Tracy, J. L. (2024). How does it feel to be greedy? The role of pride in avaricious acquisition. *Journal of Personality*, 92, 565–583. <https://doi.org/10.1111/jopy.12852>