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The Benefits of Following Your Pride: Authentic Pride Promotes Achievement

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Although the emotion *authentic pride* has been posited to promote achievement, it remains unclear precisely how this works. Here, we tested whether authentic pride promotes adaptive downstream achievement outcomes by motivating individuals to engage in appropriate behavioral responses to success and failure. In two longitudinal studies ($N = 1{,}132$), we measured pride emotional responses to a prior performance and subsequent changes in achievement-oriented behavior and performance outcomes among (a) adults training for long-distance running races and (b) undergraduates completing class exams. Authentic pride shifted in direct response to achievement outcomes, such that those who performed well felt greater pride. Furthermore, individuals who felt low authentic pride responded to these feelings by changing their achievement behavior in a functional manner. In Studies 2a, 2b, and 2c, we found that pride-driven behavioral changes led to improved future performance among low performers. In these studies we also demonstrated that the effect of authentic pride on achievement is independent of that of self-efficacy, which in fact works in an opposite manner. Taken together, these results suggest that authentic pride functions as a barometer of achievement, promoting behavioral responses that lead to improved performance.

A wealth of folk wisdom tells us to use our emotions when appraising life circumstances; when faced with a conundrum, the first question we often ask ourselves is, "How do I feel about it?" (Schwarz, 1990). Psychological scientists have also recognized the informational value of affective cues in guiding individuals' appraisals in a variety of domains, such as determining whether our memories are accurate (Hart, 1965), whether we are living up to personal goals (Higgins, 1987), our current level of social status (Leary, Tambor, Terdal, & Downs, 1995), and our quality of life (Schwarz & Clore, 1983). More recently, researchers have begun to document the informational value of several distinct emotions (e.g., sadness, disgust, anger) in guiding spending decisions (e.g., Cryder, Lerner, Gross, & Dahl, 2008; Lerner, Li, & Weber, 2013), evaluations of social groups (e.g., Eskine, Kacinik, & Prinz, 2011; Inbar, Pizarro, & Bloom, 2012), and political attitudes (e.g., Small & Lerner, 2008; Small, Lerner, & Fischhoff, 2006). These affective cues influence appraisals and decisions by providing information relevant to the given situation, and motivating individuals to change their behavior in a beneficial manner best suited to coping with the situation. The affective cues are therefore thought to be functional, in that they signal discrepancies between current and desired states, and promote subsequent behavioral strategies oriented toward changing one's situation for the better (Carver & Scheier, 1990; Larsen, 2000; Schwarz, 1990; Simon, 1967).

The present research aimed to extend this functionalist account of emotions to the distinct emotion of *authentic pride*, a form of pride associated with feelings of confidence, accomplishment, and self-worth (in contrast to *hubristic pride*, the form of pride associated with arrogance and egotism; Tracy & Robins, 2007). Authentic pride results largely from successes that are attributed to one's own effort (Tracy & Prehn, 2012; Tracy & Robins, 2007; Weiner, 1985; but see Holbrook, Piazza, & Fessler, 2014; Tracy & Robins, 2014), and may function to promote future achievements and, ultimately, the attainment and maintenance of social status (Cheng, Tracy, & Henrich, 2010; Tracy, Shariff, & Cheng, 2010). Despite theoretical accounts suggesting that authentic pride promotes status attainment by motivating socially valued achievements, it remains unclear *how* this works; that is, what is the process through which authentic pride promotes achievement-related outcomes? We are also aware of no studies that have tested whether authentic pride in fact has functional downstream effects on such outcomes.

In the present research, we tested whether feelings of authentic pride promote achievement outcomes in two distinct contexts: academic and athletic. Consistent with control-process

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accounts, we predicted that low authentic pride would function to help individuals gauge their current level of success and would subsequently promote adaptive changes in achievement-oriented behaviors. We further predicted that these behavioral changes would result in improved achievement outcomes for those who previously performed poorly; specifically, we expected that low authentic pride would predict improved future performance for poor performers, and that this effect would be mediated by changes in achievement-oriented behaviors.

EMOTIONS, ACHIEVEMENT, AND STATUS: A FUNCTIONALIST PERSPECTIVE ON AUTHENTIC PRIDE

According to functionalist accounts of emotions, distinct emotions are adaptive by virtue of facilitating goal attainment in fitness-relevant domains. Specifically, emotions arise in response to environmental signals of opportunities or challenges, and initiate a sequence of coordinated action tendencies, motivations, and behaviors that best allow the individual to capitalize on the opportunity or cope with the specific challenge (Fridja, 1988; Keltner & Gross, 1999; Nesse, 1990; Tooby & Cosmides, 1990). Self-conscious emotions, in particular, are thought to help individuals solve the environmental challenge of attaining or maintaining social status and acceptance in the eyes of their social group, in part by regulating instrumental achievement behavior (Tracy & Robins, 2004). Individuals who achieve—that is, those who can effectively demonstrate the possession of skills, knowledge, and expertise that are valuable to their social group—attain prestige-based social status, a form of high rank based in part on appraisals of competence (Anderson & Kilduff, 2009; Cheng, Tracy, Foulsham, Kingstone, & Henrich, 2013; Henrich & Gil-White, 2001; Littlepage, Schmidt, Whisler, & Frost, 1995). Prior studies suggest that authentic pride may promote prestige-based status; individuals who tend to chronically experience this form of pride judge themselves, and are judged by others who know them well, as high in prestige (Cheng et al., 2010).

However, it is not entirely clear *how* the experience of authentic pride promotes the attainment of social status. According to control-process accounts, emotions motivate goal pursuit by signaling a discrepancy between an individual's current and desired state (Leary et al., 1995; Simon, 1967), or by indicating that the individual is not making sufficient progress toward his or her goals (Carver & Scheier, 1990; Larsen, 2000). These perceived discrepancies lead to a negative emotional signal (e.g., unpleasant affect, low self-esteem), which in turn provides a motivational push for individuals to increase their pursuit of the desired goal state. In support of this account, studies have shown that individuals who feel negative emotions seek to understand the causes of their feelings (Schwarz & Clore, 1983), presumably in an effort to identify strategies by which they might down-regulate their negative feelings (Larsen, 2000; Schwarz, 1990). Similarly, low self-esteem has been shown to inform individuals that they have been excluded from a social group, and to motivate them to respond by engaging in strategies oriented toward ameliorating these feelings, such as derogating those who excluded them (Leary et al., 1995).

Building on these accounts, we predicted that feelings of authentic pride would promote achievement in a similar manner. Specifically, we expected that individuals would use authentic pride as a barometer to gauge their current level of success. In this account, high authentic pride should indicate success, whereas low authentic pride should indicate failure, and this information should guide individuals' preparation for subsequent achievement activities. When high authentic pride is experienced, individuals should respond with plans to behave similarly in the future, whereas low authentic pride should result in plans to behave differently, in an effort to improve performance. Importantly, these predictions imply that feelings of *low* pride are what lead to behavioral change, regardless of prior performance; for example, people who performed poorly yet feel high pride are not expected to change their behavior (only low pride is expected to promote behavioral change), and people who performed well but feel low pride *are* expected to change their behavior, even though they need not. As a result, the behavioral intentions informed by low authentic pride should lead to adaptive outcomes primarily for individuals who previously performed poorly; by changing their behavior, these individuals should experience improved performance, compared to those who maintain similar behaviors in the face of a poor performance. In contrast, high performers who change their behaviors in response to low authentic pride will be less likely to show improvement, because they have less room to improve. Thus, in our account, successful achievement is dependent on two propositions: (1) authentic pride must accurately gauge prior achievement, and (2) individuals must use the information provided by their feelings of low authentic pride when implementing future achievement behaviors.

IS AUTHENTIC PRIDE AN ACCURATE BAROMETER OF ACHIEVEMENT?

Prior studies have not directly tested the first proposition of our model: that authentic pride is an accurate gauge of prior achievements. Several findings are suggestive, however. The experience or recollection of a success experience has been associated with high levels of pride across several studies (Heatherton & Polivy, 1991; McFarland & Ross, 1982; Weiner, Russell, & Lerman, 1979; Williams & DeSteno, 2008), but it is unclear whether the form of pride measured in these studies was authentic pride or hubristic pride, or a blend of the two.

One set of studies, however, did provide clearer evidence that the informational value of pride regarding achievement is specific to authentic pride. Tracy and Robins (2007) asked individuals to rate authentic and hubristic pride feelings experienced in response to recalled successes and hypothetical vignettes. Participants reported greater authentic pride in response to successes

caused by forces that were controllable and unstable, suggesting that authentic pride is more likely to arise following successes that an individual attributes to his or her own efforts (as opposed to his or her stable abilities) and to a specific behavior (as opposed to a stable disposition). This study was limited, however, by a reliance on retrospective and hypothetical reports of emotional experiences, which often correspond more strongly to beliefs about emotional experiences than actual emotional experiences (Robinson & Clore, 2002). Thus, although these prior studies suggest that authentic pride functions as a gauge of achievement, it remains unclear whether authentic pride accurately gauges achievement in response to real-life, currently occurring successes. In the present research, we separately assessed both forms of pride, to directly address this question.

DOES AUTHENTIC PRIDE PROMOTE THE IMPLEMENTATION OF ACHIEVEMENT BEHAVIOR?

To date, prior studies have not tested the second proposition of our model: that individuals respond to the information provided by feelings of *low* authentic pride by changing their achievement behaviors in a functional manner. Notably, several studies have examined the motivational influence of *high* pride on achievement and related behaviors, showing, for example, that high levels of generalized pride cause individuals to demonstrate increased effort and persistence at challenging activities (Sigall & Gould, 1977; Williams & DeSteno, 2008), and to experience a heightened sense of self-efficacy and goal congruence when completing achievement tests (Herrald & Tomaka, 2002). Similarly, one study found that students who experienced high levels of pride in an academic course early in the semester performed better on class exams later in the semester (Pekrun, Elliot, & Maier, 2009).

Although these studies have demonstrated a positive relation between pride and achievement-related outcomes, in our view they address only half the story regarding this link. These prior findings indicate that *high* pride energizes individuals to engage in effortful, persistent strategies toward their achievement goals, but our theoretical account suggests that *low* pride also promotes achievement, through a secondary route. Specifically, low pride may inform individuals that they are performing poorly, and thereby motivate them to *change* their achievement-related behaviors and strategies in an effort to improve subsequent performance. According to this model, one reason for the prior findings of a positive relation between pride and performance is that pride *informs* individuals that they are performing well, and thus that they should continue engaging in the same achievement behaviors that led to their initial success (e.g., persistence; Sigall & Gould, 1977; Williams & DeSteno, 2008). In other words, from an affect-as-information perspective, high pride should promote the maintenance of similar behaviors, making pride an adaptive emotional response to success, but not to failure. In contrast, low pride should promote a change in behavior, making it the more adaptive response to failure. No prior studies, including those that have documented a positive relation between pride and achievement, have tested this account. We thus conducted the first test of this informational model linking low pride to improved performance. We sought to do so while also conducting the first rigorous test of the relation between pride and concrete achievement outcomes. The only prior study to find an association between pride and a concrete outcome (i.e., subsequent exam grades; Pekrun et al., 2009) did not control for prior academic performance, leaving doubt as to whether pride influenced achievement outcomes above and beyond effects due to prior achievement (i.e., prior academic success might have predicted future success, with pride being merely incidental).

PRESENT RESEARCH

In the present research, we tested the following three hypotheses: (1) authentic pride is a functional barometer that helps individuals gauge their current level of achievement, (2) this barometer leads individuals to change their achievement behavior in a functional manner, and (3) behavioral changes driven by low levels of authentic pride lead to improved downstream achievement outcomes for individuals who previously performed poorly.

In Study 1, we tested hypotheses (1) and (2) in the athletic achievement domain, by assessing individuals' feelings of authentic pride in response to progress in training for long-distance running races, and then assessing their corresponding plans for future training change. If authentic pride is a barometer of success, it should fluctuate in response to performance in real-life achievement contexts, so we predicted that individuals who experienced success in the athletic achievement domain would report greater authentic pride in response, compared to individuals who performed poorly. Similarly, if authentic pride facilitates achievement behaviors, feelings of low authentic pride should predict changes in subsequent training plans, whereas high authentic pride should predict continuity of training behavior.

In Studies 2a, 2b, and 2c, we tested all three hypotheses in an academic achievement context. We assessed individuals' feelings of authentic pride following an achievement exam, their subsequent plans for behavioral change and actual subsequent studying behaviors, and actual changes in their performance on subsequent achievement exams. We predicted that individuals who performed poorly on a first exam would experience low levels of authentic pride and would respond by changing their studying behavior for subsequent exams. We further predicted that these behavioral changes would predict improved performance on subsequent exams, for those who had previously done poorly.

Additionally, in Studies 2a, 2b, and 2c, to better integrate our model with prior models linking cognitive–affective processes and achievement, we compared the effect of authentic pride on academic achievement with that of self-efficacy. Self-efficacy, or the perception that one has the requisite skills and competencies to take on and succeed at tasks that are instrumental to one's

goals, is theorized to arise based on appraisals of prior performance; success on previous achievement tasks is thought to engender expectations of success on future similar tasks (Bandura, 1977). Self-efficacy is thought to promote achievement by motivating individuals to set high standards, formulate strategies, and exert effort in service of goal attainment (Bandura, 1977; Bandura & Schunk, 1981). Indeed, comprehensive meta-analyses have found that self-efficacy positively predicts success across occupational and academic contexts, in part by promoting engagement and persistence in instrumental achievement tasks (Multon, Brown, & Lent, 1991; Stajkovic & Luthans, 1998). These findings suggest that self-efficacy is an important predictor of achievement outcomes, but one that works very differently from the authentic "pride-o-meter." Whereas authentic pride may function to *inform* individuals of their level of success and promote behavioral change on the basis of this information, self-efficacy functions to directly *motivate* individuals to invest time and effort in implementing beneficial achievement strategies.

As a result of these differences, although we predicted that individuals who performed well on a prior exam would feel both high authentic pride and high self-efficacy, we expected that the process linking self-efficacy to exam performance would be opposite to that linking authentic pride to exam performance. Specifically, we predicted that individuals who felt *high* self-efficacy regarding an upcoming exam, following a poor performance, would be motivated to engage in subsequent achievement behaviors, which would in turn predict improvements in future performance. In contrast, low feelings of self-efficacy should promote disengagement, curtailing the motivation to work hard to improve subsequent performance.

For authentic pride, however, we predicted that individuals who felt *low* authentic pride in response to a prior poor performance would *change* their subsequent achievement behavior, which would in turn predict improved future performance. In contrast, feelings of high authentic pride were expected to inform individuals that they should maintain the same behaviors in order to continue performing at a high level, so we did not expect to see behavioral change among those individuals. In other words, consistent with prior work (e.g., Pekrun et al., 2009; Williams & DeSteno, 2008), high-performing students who felt pride were expected to continue to study effectively for subsequent exams, and these behaviors were expected to be functional, given that they previously led to high performance. In sum, although our model for authentic pride bears some similarity to that for self-efficacy, it differs from it both in the process that is thought to occur (i.e., informational versus motivational), and the level of each construct that is thought to be adaptive in response to failure (i.e., *high* self-efficacy versus *low* authentic pride). Importantly, we predicted that both authentic pride and self-efficacy would be most effective in promoting future performance among students who had previously performed poorly, given that these individuals had the most opportunity to benefit from the informational or motivational push afforded. Studies 2a, 2b, and 2c tested these predictions.

Finally, in all four studies, we specifically assessed authentic pride, and compared effects of authentic pride to those of hubristic pride, to examine whether, as predicted, the barometer function of pride is driven by authentic pride in particular. Together, these four studies provide the first comprehensive test of our account of authentic pride as a barometer that functions to gauge and promote achievement.

STUDY 1

Method

Participants

Participants were 108 adults from the greater Vancouver, BC, community (77% women; $M_{age} = 34.80$; $SD = 8.88$; range = 20 to 60), enrolled in 2- to 4-month-long race-training clinics conducted through the Running Room (a national Canadian chain of running stores). Clinics prepared participants to complete a race of a specific length, and organized multiple weekly meetings in which participants went on group runs, attended motivational and educational presentations (e.g., from physical therapists, nutritionists, and psychologists), and were given personalized training guidance by an instructor. The majority of participants were training for a marathon (42.2 km; $n = 34$) or half-marathon (21.1 km; $n = 53$), and one participant was training for a 10km race.

Procedure

The first author received permission from store managers and clinic directors at four Vancouver Running Room locations to attend sessions near the beginning of each clinic to recruit participants. Those who volunteered to participate, in exchange for entry into a draw for one of six $100 gift cards to the Running Room, were contacted via email for all subsequent assessments. Participants completed an initial assessment during the week of recruitment, and were subsequently contacted once each month for the duration of the clinic (4 months total), and asked to complete up to three follow-up assessments of their training progress, their training-specific authentic pride, and their training plans for the subsequent month. One-hundred and one participants (76% women) completed one follow-up assessment, 80 participants (74% women) completed two follow-ups, and 71 (72% women) completed all three follow-ups. Differences in sample sizes are due to differences in clinic lengths and retention rates; we used all available data at each time point.

Measures

Training Progress. At each time point, participants completed three items measuring their training progress ("To what extent have you followed your training plan over the past month?"; "To what extent have you met your training goals over the past month?"; "How intense has your training been over the past

month?") on a 5-point scale (1 = not at all; 5 = very much). These three items were averaged to create a composite measure of perceived training progress at each time point (αs = .78 to .91).

Pride. Trait and state (training-specific) authentic and hubristic pride were assessed with the 14-item Authentic and Hubristic Pride Scale (AHPS; Tracy & Robins, 2007). To measure trait pride, at the initial assessment participants reported the extent to which they generally feel each scale item (α = .88 for authentic pride; α = .80 for hubristic pride); trait authentic and hubristic pride were relatively orthogonal (r = -.02, p = .82). To measure training-specific pride, participants reported the extent to which they felt each scale item regarding their training over the past month at each time point (αs = .94 to .95 for authentic pride; .83 to .91 for hubristic pride); training-specific authentic and hubristic pride were weakly, positively correlated at follow-ups 1 (r = .13, p = .20) and 2 (r = .19, p = .09), but relatively orthogonal at follow-up 3 (r = -.04, p = .76). Given our interest in the role of training-specific pride—above and beyond trait pride—in promoting success, we regressed training-specific pride on its corresponding facet of trait pride (e.g., training-specific authentic pride was regressed onto trait authentic pride), and saved the unstandardized residuals.[1] These residuals represent fluctuations in training-specific pride above participants' baseline levels, and are used in all reported analyses.[2]

Plans to Train Differently. Participants reported their plans to change their training habits over the upcoming month by completing three items: "To what extent do you plan to change your training habits over the next month compared to the past month?"; "To what extent will your training over the next month be different than it was over the previous month?"; "To what extent do you plan to train the same over the next month as you did over the past month?" [reversed]. These items were combined into a composite measure of plans to change training habits at each time point (αs = .50, .73, and .80, respectively).[3]

Results

Overview

Bivariate correlations among all study variables are presented in Table S1 of the Supporting Information. Given that reports of training progress, training-specific pride, and plans to train differently were, at each follow-up assessment, nested within participants, we tested our hypotheses using multilevel modeling in R. Across all analyses, level-one predictors were allowed to vary randomly within persons.

Is Authentic Pride a Barometer of Success?

To address this question, we regressed training-specific authentic pride onto training progress. As predicted, participants who achieved greater training success over the prior month felt greater training-specific authentic pride than participants who believed they had achieved less success (b = .54, p < .001, CI_{95} = .46 to .62). Prior month's training success was also very weakly related to training-specific hubristic pride (b = .06, p < .01, CI_{95} = .01 to .11); however, given that the confidence interval for authentic pride does not include the parameter estimate for hubristic pride, and vice versa, we can conclude that authentic pride is a stronger barometer of training success than hubristic pride.

Does Authentic Pride Function to Promote Achievement Behavior?

To address this question, we regressed plans to train differently onto training-specific authentic pride. As predicted, participants who felt less authentic pride regarding their training progress reported stronger intentions to adjust their training habits over the subsequent month (b = –.32, p < .001, CI_{95} = –.47 to –.17). Training-specific hubristic pride also showed a weak negative relation with plans to change training habits (b − -.17, p = .27, CI_{95} = –.47 to .13); given that the parameter estimate for hubristic pride falls at the very bottom of the confidence interval for authentic pride, we can be reasonably confident that authentic pride is more strongly related to shifts in training behavior than is hubristic pride.[4]

Discussion

Study 1 provides the first evidence that authentic pride promotes achievement-related behavior in the athletic domain. Training-specific authentic pride allowed runners to gauge the extent to which they were meeting their training goals, following their training plans, and training at a high level of intensity. These feelings, in turn, influenced runners' subsequent achievement behavior; runners who felt low levels of authentic pride—signaling a lack of training progress—reported stronger intentions to adjust their subsequent training habits, presumably in an effort to increase their likelihood of making progress toward their goal of completing the race. Importantly, these effects emerged when holding constant individuals' dispositional tendency to experience authentic pride, and they emerged more strongly for authentic than hubristic pride, suggesting that the former functions as a more effective barometer of achievement.

To test the final component of our model linking authentic pride to achievement—that the behavioral changes induced by low authentic pride influence downstream achievement outcomes—in Studies 2a, 2b, and 2c we examined our theoretical model in an academic achievement context. Specifically, we assessed individuals' feelings of authentic pride in response to a class exam, and then their corresponding plans for future studying for a subsequent exam, and finally tracked their performance on that subsequent exam. If authentic pride functions to promote achievement in the manner predicted by our model, then feelings of low authentic pride in response to exam failure should predict

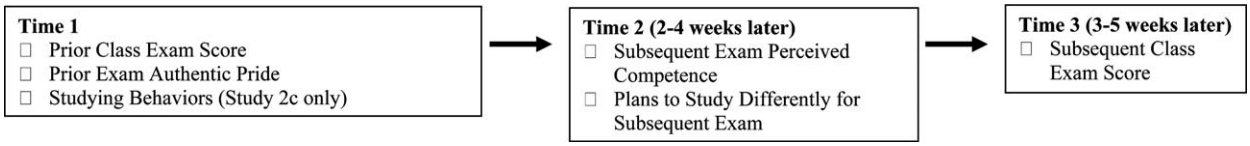

Figure 1 Timeline of Each Analysis Cycle.

improved subsequent exam performance by influencing students to change their studying behaviors.

STUDIES 2a, 2b, and 2c

Studies 2a, 2b, and 2c, were designed to be almost identical to one another, all with the primary goal of testing the robustness of our model by directly replicating its most important hypothesized effects across three separate samples of participants and six separate time points. Additionally, in all three studies we tested our model alongside a model linking self-efficacy to academic achievement. Specifically, we tested whether *high* self-efficacy—in contrast to *low* authentic pride—would promote improved exam performance for low-performing students, by motivating these students to change their studying behaviors. Finally, in Study 2c, we measured actual changes in time spent studying between two class exams, to test whether our model predicted concrete studying behaviors (as opposed to self-reported intentions for behavioral change).[5]

Method

Participants

One thousand and twenty-four undergraduate students enrolled in an introductory psychology course participated in the study (Study 2a: $N = 287$, 64% women, $M_{age} = 19.40$, $SD = 2.01$; Study 2b: $N = 397$, 64% women, $M_{age} = 19.43$, $SD = 1.34$; Study 2c: $N = 340$, 65% women, $M_{age} = 19.43$, $SD = 1.79$). Attrition was minimal across assessments (in Study 2a, 98–100% of participants completed each assessment, ns = 281–287; in Study 2b, 89–96% completed each assessment, ns = 352–380; and in Study 2c, 91–96% completed each assessment, ns = 311–325). We used all available data at each assessment.

Procedure

In all three studies, participants reported trait authentic pride and self-efficacy during the first week of a semester-long course. The longitudinal aspect of the study then involved an analysis cycle of three data-collection occasions, repeated twice during the course of the semester (see Figure 1). First, participants took a class exam (i.e., exam 1 or 2 of the course). Then, immediately after learning their score on the exam, participants reported their authentic pride for that exam and studying behaviors for the just-completed exam (Study 2c only). Second, 2–4 weeks after the initial exam, and 1 week prior to the subsequent exam, participants reported their perceived competence (used as a state measure of self-efficacy) and plans to study differently for the subsequent exam. Third, 3–5 weeks after the initial exam, participants took a subsequent class exam (i.e., exam 2 or 3 of the course). No measures were taken after exam 3, because the class had ended for the semester, but exam scores were obtained and treated as a dependent variable.

Measures

Class Exams. In all three studies, class exams consisted of multiple choice, fill-in-the-blank, and short-answer questions.

Pride. In all three studies, authentic and hubristic pride were assessed with the 14-item AHPS (Tracy & Robins, 2007). Trait pride was assessed by asking participants to report the extent to which they generally feel each scale item (αs = .88 to .90 for authentic and hubristic pride); trait authentic and hubristic pride were positively correlated in Study 2a ($r = .21$, $p < .001$), but were relatively orthogonal in Studies 2b ($r = .04$, $p = .39$) and 2c ($r = .07$, $p = .20$). We assessed state (exam-specific) pride by asking participants to report the extent to which they felt each scale item regarding their performance on the just-completed exam (αs = .95 to .96 for authentic pride; αs = .89 to .94 for hubristic pride); exam-specific authentic and hubristic pride in response to each exam were moderately, positively correlated, in all three studies (rs = .29 to .38, ps < .001). As in Study 1, given our interest in the role of exam-specific pride—above and beyond trait pride—in promoting success, in all studies we regressed exam-specific pride on its corresponding facet of trait pride (e.g., exam-specific authentic pride was regressed onto trait authentic pride), and saved the unstandardized residuals. These residuals represent fluctuations in exam-specific pride above participants' baseline levels, and are used in all reported analyses.

Self-efficacy. In all three studies, trait self-efficacy was assessed with the eight-item New General Self-Efficacy Scale (Chen, Gully, & Eden, 2001; e.g., "I believe I can succeed at most any endeavor to which I set my mind"; "Even when things are tough, I can perform quite well"; αs = .90 to .91). Additionally, exam-specific perceived competence—typically seen as a core component of self-efficacy (Bandura, 1977)—was assessed prior to each exam by asking participants to complete two items

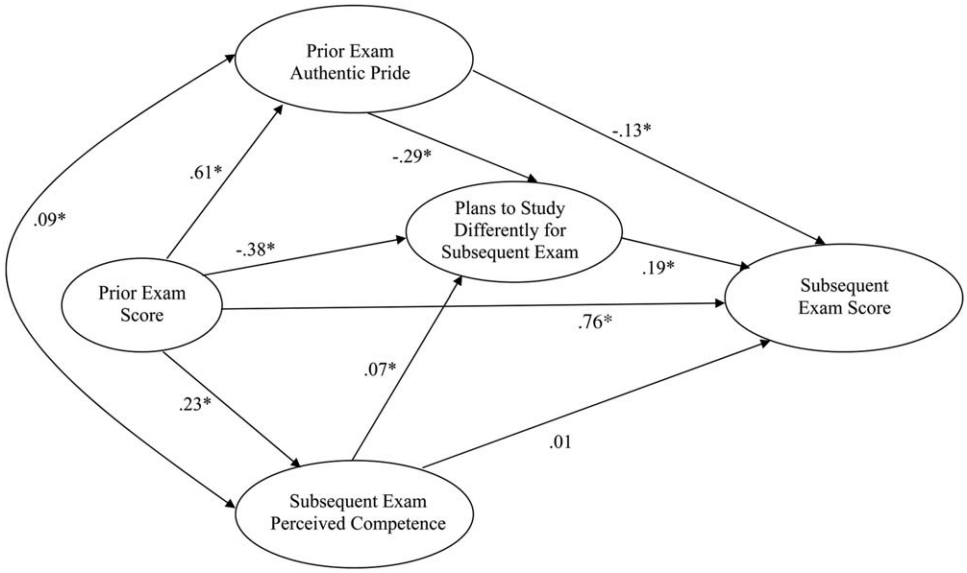

Figure 2 Schematic Depiction of Our Primary Model Involving Authentic Pride, Self-Efficacy, and Exam Performance, for Low-Performing Students (Studies 2a, 2b, and 2c).
Note: N = 1,024. Parameter estimates are meta-analytically derived, and standardized for ease of interpretation. * p <.05.
The figure presents results for students who performed one standard deviation below the mean on a prior exam.
An interaction between prior exam score and subsequent exam study plans, β = -.08, p < .001, indicated that study plans predicted future exam score more strongly for low-performing (β = .19, p < .001) than high-performing students (β = .03, p = .26).

("I expect to do well on the exam"; "I believe I will get an excellent grade on the exam") on a 7-point scale (1 = not true of me; 7 = extremely true of me). Items were averaged to form a composite for each exam in all three studies (αs = .85 to .91). As with pride, given our interest in the role of exam-specific perceived competence—above and beyond general self-efficacy—in promoting success, in all studies we regressed exam-specific perceived competence on general self-efficacy, and saved the unstandardized residuals. These residuals represent fluctuations in exam-specific perceived competence above participants' baseline levels, and are used in all reported analyses.

Plans to Study Differently. In all three studies, participants reported their plans to study differently for subsequent exams compared to the prior exam by completing two items (e.g., "My preparation for exam 2 will be different than my preparation for exam 1" and "I plan to study for exam 2 differently than I studied for exam 1") on a 7-point scale (1 = not at all true of me; 7 = very true of me). These items were averaged to create a two-item composite measure of plans to study differently for each exam (αs = .91 to .97).

Studying Behaviors. In Study 2c, participants reported the number of days, and number of hours per day, that they spent studying for both exam 1 and 2 of the class. Participants reported studying similar amounts for exam 1 (M_{Days} = 2.92; SD = 1.66; $M_{HoursPerDay}$ = 3.82; SD = 2.65) and exam 2 (M_{Days} = 2.99; SD = 1.66; $M_{HoursPerDay}$ = 3.92; SD = 2.50). To create indices of the extent to which students changed their studying behaviors for exam 2, compared to exam 1, we regressed the number of days and number of hours per day studied for exam 2 onto the corresponding variables for exam 1, and saved the unstandardized residuals.

Results

Overview

Bivariate correlations among all study variables are presented in Tables S2-S4 of the Supporting Information. For all three studies, there were two identical analysis cycles, one involving the interval from exam 1 to exam 2, and one involving the interval from exam 2 to exam 3, for a total of six analysis cycles. For each analysis cycle, we tested our model regarding authentic pride and exam performance through path analysis, using the lavaan package in R. All variables were centered prior to fitting the model.

The tested model involved several components (see Figure 2). First, prior exam score was used to predict both authentic pride regarding the prior exam (henceforth *prior exam authentic pride*) and perceived competence regarding the subsequent exam (henceforth *subsequent exam perceived competence*), which in turn were used to predict changes in studying behaviors for the subsequent exam (henceforth *plans to study differently*). We used perceived competence regarding the subsequent exam—rather than the prior exam—because self-efficacy involves an appraisal of one's ability to succeed or competently perform at a future achievement task, and is

Table 1 Meta-Analytically Derived Parameter Estimates for Primary Model (Studies 2a, 2b, and 2c)

Parameter	Estimate	SE	*z*	*p*	CI_{95}	Estimate (Std)
Prior Exam Score → Prior Exam APride	.05	.001	32.74	<.001	.04 to .05	.61
Prior Exam Score → Subsequent Exam PC	.02	.002	10.62	<.001	.02 to .02	.23
Prior Exam Score → Subsequent Exam Study Different	–.05	.003	16.20	<.001	–.06 to –.05	–.38
Prior Exam APride → Subsequent Exam Study Different	–.52	.042	12.43	<.001	–.60 to –.44	–.29
Subsequent Exam PC → Subsequent Exam Study Different	.10	.029	3.52	<.001	.04 to .16	.07
Prior Exam Score → Subsequent Exam Study Different x Prior Exam Score	.69	.051	13.53	<.001	.59 to .78	.37
Prior Exam APride → Exam Study Different x Prior Exam Score	−4.63	.648	7.15	<.001	−3.36 to 1.65	–.19
Subsequent Exam PC → Exam Study Different x Prior Exam Score	−2.50	.437	5.73	<.001	−3.36 to –.165	–.12
Prior Exam Score → Subsequent Exam Score	.68	.021	32.49	<.001	.64 to .73	.76
Prior Exam APride → Subsequent Exam Score	−1.54	.243	6.36	<.001	−2.02 to −1.07	–.13
Subsequent Exam PC → Subsequent Exam Score	.12	.166	.75	.45	–.20 to .45	.01
Subsequent Exam Study Different x Prior Exam Score → Subsequent Exam Score	–.04	.009	4.58	<.001	–.06 to –.02	-.08
Subsequent Exam Study Different → Subsequent Exam Score	.70	.130	5.42	<.001	.45 to .96	.11
Subsequent Exam Study Different → Subsequent Exam Score (high prior score)	.17	.153	1.12	.26	–.13 to .47	.03
Subsequent Exam Study Different → Subsequent Exam Score (low prior score)	1.26	.193	6.54	<.001	.77 to 1.64	.19
Prior Exam APride → Exam Study Different → Subsequent Exam Score (high prior score)	–.08	.081	.99	.32	–.24 to .08	-.01
Prior Exam APride → Exam Study Different → Subsequent Exam Score (low prior score)	–.58	.110	5.26	<.001	–.79 to –.36	-.06
Subsequent Exam PC → Exam Study Different → Subsequent Exam Score (high prior score)	–.01	.016	.31	.76	–.04 to .03	.00
Subsequent Exam PC → Exam Study Different → Subsequent Exam Score (low prior score)	.07	.038	1.94	.05	.00 to .15	.01
Exam Study Different x Prior Exam Score ∼ Exam Study Different	8.32	.851	9.77	<.001	6.65 to 9.99	.17
Prior Exam APride ∼ Subsequent Exam PC	.12	.023	5.26	<.001	.08 to .17	.09

Note. Total $N = 1{,}024$; APride = authentic pride; PC = perceived competence; Study Different = plans to study differently for subsequent exam compared to prior exam; high prior score = students scoring one standard deviation above the mean on prior exam; low prior score = students scoring one standard deviation below the mean on prior exam; → = regression coefficient; ∼ = covariance; Std = standardized

therefore thought to motivate engagement in such future tasks (Bandura, 1977; Bandura & Schunk, 1981). Plans to study differently were in turn used to predict subsequent exam score, and this final path was examined separately for students who performed well versus poorly on the prior exam. Importantly, by including both authentic pride and perceived competence in the same model, we were able to test whether authentic pride promoted changes in studying behavior and improved exam performance simultaneously to, and independent of, any effect of perceived competence on those variables.

Additionally, in Study 2c, we tested whether effects held when a concrete behavioral measure was used to assess changes in studying behavior instead of reported intentions to change. For the analysis cycle running from exam 1 to exam 2, we fit an identical model to the one described above, substituting changes in both number of days and number of hours per day studied for exam 2 compared to exam 1, for plans to study differently for exam 2 compared to exam 1. Finally, in all three studies, we tested whether authentic pride is a stronger barometer of success, and functions more strongly to promote achievement behavior,

compared to hubristic pride. To accomplish this goal, we substituted hubristic pride for authentic pride in our primary model described above.

To arrive at more precise effect size estimates, we conducted an internal meta-analysis of all model coefficients from our primary model, including coefficients involving hubristic pride, when it was substituted into our primary model.[6] Given that our interest was in drawing conclusions only about the effects estimated in our set of studies, we used a fixed-effects model (Konstantopolous & Hedges, 2009). Following recommendations by Lipsey and Wilson (2001) unstandardized model coefficients from each of our six models were weighted by the inverse of their variance, to arrive at an average unstandardized effect size estimate. We performed statistical inference tests by dividing the average effect sizes by their standard error, and computed 95% confidence intervals using normal theory, using the standard error of the average effect sizes to estimate upper and lower bounds. To aid interpretation, effect sizes were standardized for presentation, using the pooled variances from the original variables.

Table 1 and Figure 2 present meta-analytically derived coefficients for our primary models. Tables S5 and S6 and Figure S1 of Supporting Information present coefficients for models in which concrete behavioral measures were used to index changes in studying behaviors. Below we present meta-analytically derived coefficients for our primary models. Notably, the pattern of results was identical across all six analysis cycles, though meta-analyzing gave greater statistical power, increasing the statistical significance of all coefficients. Coefficients from our primary model for all six analysis cycles are presented in Tables S7 to S12 of the Supporting Information.

Is Authentic Pride a Barometer of Success?

Participants who performed well on class exams felt greater authentic pride following those exams than participants who performed poorly ($b = .048$, $p < .001$, $CI_{95} = .045$ to $.050$, $\beta = .61$). Participants who performed well also felt greater hubristic pride ($b = .006$, $p < .001$, $CI_{95} = .004$ to $.007$, $\beta = .14$); however, given that the confidence interval for authentic pride does not include the parameter estimate for hubristic pride, and vice versa, we can conclude that authentic pride is a stronger barometer of academic success than hubristic pride. Finally, participants who performed well on class exams also felt greater perceived competence regarding the subsequent exam, though this effect was smaller than the effect of exam score on authentic pride ($b = .021$, $p < .001$, $CI_{95} = .017$ to $.025$, $\beta = .23$).

Does Authentic Pride Function to Promote Achievement Behavior?

Authentic pride in response to prior exams negatively predicted plans to study differently for subsequent exams ($b = -.52$, $p < .001$, $CI_{95} = -.60$ to $-.44$, $\beta = -.29$). Hubristic pride in response to prior exams also negatively predicted plans to study differently for subsequent exams ($b = -.27$, $p < .001$, $CI_{95} = -.40$ to $-.14$, $\beta = -.08$); however, given that the confidence interval for authentic pride does not include the parameter estimate for hubristic pride, and vice versa, we can conclude that authentic pride promotes achievement behavior more strongly than does hubristic pride.

In contrast to the effects of authentic pride, perceived competence for subsequent exams showed a weak, positive relation with plans to study differently for subsequent exams ($b = .10$, $p < .001$, $CI_{95} = .04$ to $.16$, $\beta = .07$). Thus, participants who felt *less* authentic pride regarding exam performance, above and beyond their actual exam score, reported stronger intentions to adjust their future study habits, whereas participants who felt *more* competent regarding an upcoming exam performance reported stronger intentions to adjust their study habits for that exam.

These effects held when studying plans were indexed with the concrete behavioral measure of hours studied per day. Authentic pride in response to prior exam negatively predicted changes in number of hours per day studied for exam 2, compared to exam 1 ($b = -.38$, $p = .02$, $CI_{95} = -.69$ to $-.07$, $\beta = -.17$). However, the effect did not hold for number of days studied ($b = .02$, $p = .86$, $CI_{95} = -.17$ to $.21$, $\beta = .01$). In contrast, perceived competence for subsequent exams showed weak, nonsignificant relations with both measures; however, these effects were of similar size as those found with plans to study differently (number of hours per day: $b = .12$, $p = .30$, $CI_{95} = -.11$ to $.35$, $\beta = .07$; number of days: $b = .10$, $p = .15$, $CI_{95} = -.04$ to $.24$, $\beta = .09$).

Does Authentic Pride Promote Improved Performance?

To test whether authentic pride-driven behavioral change led to improved exam performance for those who had performed poorly on the prior exam, we computed the indirect effect of prior exam authentic pride on subsequent exam score, through plans to study differently for subsequent exams. Given our prediction that low authentic pride and high self-efficacy most strongly benefit students who performed poorly, we tested whether this effect differed depending on prior exam score, by examining the interaction between prior exam score and plans to study differently for subsequent exams.

As predicted, an interaction emerged between prior exam score and plans to study differently for subsequent exams ($b = -.04$, $p < .001$, $CI_{95} = -.06$ to $-.02$, $\beta = -.08$). To understand the nature of this interaction, we conducted a simple slopes analysis, examining the relation between plans to study differently and subsequent exam score for students one standard deviation above and below the mean (Cohen, Cohen, West, & Aiken, 2003). Plans to study differently for subsequent exams positively and significantly predicted subsequent exam performance for students who performed poorly on prior exams ($b = 1.26$,

$p < .001$, $CI_{95} = .77$ to 1.64, $\beta = .19$), but not for students who performed well ($b = .17$, $p = .26$, $CI_{95} = –.13$ to .47, $\beta = .03$). As a result, for students who performed poorly on prior exams, exam-specific authentic pride exerted a small, negative, indirect effect on subsequent exam score, through its influence on plans to change study habits ($b = –.58$, $p < .001$, $CI_{95} = –.79$ to –.36, $\beta = –.06$). More specifically, a one-unit decrease in exam-specific authentic pride predicted a .06 standardized unit increase in subsequent exam score for low-achieving students. Exam-specific hubristic pride also exerted a small, negative, indirect effect on subsequent exam score ($b = –.31$, $p < .01$, $CI_{95} = –.51$ to –.11, $\beta = –.02$); however, given that the confidence interval for authentic pride does not include the parameter estimate for hubristic pride, and vice versa, we can conclude that authentic pride promotes achievement more strongly than hubristic pride. In contrast, for students who performed well on prior exams, the indirect effect of exam-specific authentic pride and hubristic pride on subsequent exam score were both near zero (authentic pride: $b = –.08$, $p = .32$, $CI_{95} = –.24$ to .08, $\beta = –.01$; hubristic pride: $b = –.04$, $p = .36$, $CI_{95} = –.12$ to .04, $\beta = .00$).

Notably, the same analyses for perceived competence revealed a similar effect, but in the opposite direction; for students who performed poorly on prior exams, the indirect effect of subsequent exam perceived competence on subsequent exam performance was small and positive ($b = .07$, $p = .05$, $CI_{95} = .00$ to –.15, $\beta = .01$), whereas the effect for students who performed well on prior exams was near zero ($b = –.01$, $p = .76$, $CI_{95} = –.04$ to .03, $\beta = .00$). Together, these findings suggest that, for poorly performing students, experiencing *low* levels of authentic pride, but *high* levels of perceived competence, promoted improved future academic performance, by virtue of prompting changes in studying.

Additionally, these effects partially held when studying plans were indexed with the behavioral measure of hours studied per day. A marginally significant interaction emerged between exam 1 score and change in number of hours per day studied for exam 2 compared to exam 1 ($b = –.03$, $p = .12$, $CI_{95} = –.07$ to .01, $\beta = –.07$). This means that, for students who performed poorly on exam 1, exam-specific authentic pride exerted a small, negative, indirect effect on subsequent exam score, through its influence on changes in number of hours per day studied ($b = –.39$, $p = .06$, $CI_{95} = –.80$ to .02, $\beta = –.03$); a one-unit decrease in exam-specific authentic pride predicted a .03 standardized unit increase in subsequent exam score for low-achieving students.[7] In contrast, for students who performed well on prior exams, the indirect effect of exam-specific authentic pride on subsequent exam score was near zero ($b = –.12$, $p = .33$, $CI_{95} = –.37$ to .13, $\beta = –.01$). Notably, the same analysis for perceived competence and hubristic pride revealed no indirect effect of subsequent exam perceived competence or hubristic pride on subsequent exam performance, regardless of students' performance on exam 1 (bs = .04 to .39, ps > .21, βs = .00 to .02). Finally, change in number of days studied for exam 2 compared to exam 1 did not predict subsequent exam score ($b = .39$, $p = .30$, $CI_{95} = –.35$ to 1.13, $\beta = .04$), and this effect was not moderated by exam 1 score ($b = –.04$, $p = .28$, $CI_{95} = –.11$ to .03, $\beta = –.05$); as a result, the indirect effects of authentic pride and perceived competence on subsequent exam score, through changes in number of days studied, were all near zero and not significant (bs = –.01 to .08, ps > .31, βs = .00 to .01).

Discussion

Studies 2a, 2b, and 2c built upon Study 1 by providing the first evidence that authentic pride is a functional barometer which, in addition to helping individuals gauge current success and influencing subsequent achievement behavior, predicts downstream performance outcomes. As in Study 1, authentic pride gauged whether students had performed well on a class exam. Additionally, authentic pride influenced students' plans for subsequent achievement behavior in an adaptive manner, such that those who felt low authentic pride reported stronger intentions to change their study habits for subsequent exams, and this effect could not be attributed to exam score, suggesting that authentic pride influences behavioral change above and beyond simple knowledge of past performance. Finally, authentic pride-driven plans to change study habits predicted improved future exam performance for low-achieving students; students who followed the feedback provided by their authentic pride (i.e., adjusted their studying habits following poor performance) achieved greater success on subsequent exams than did those who did not listen to their pride in this way.[8] Importantly, the effects of authentic pride on exam performance emerged alongside, and independent of, the effects of self-efficacy on exam performance, which were opposite in nature; *low* authentic pride, but *high* perceived competence, each promoted improved exam performance by motivating low-performing students to change their studying behaviors. Finally, all of the functional effects of authentic pride on achievement were stronger than those for hubristic pride, suggesting that the link between pride and achievement is primarily driven by authentic pride.

GENERAL DISCUSSION

The present set of studies provides the first evidence that authentic pride is a functional barometer that gauges past success and promotes achievement-oriented behavioral change and eventual improved performance on achievement tasks. Individuals respond to success—both academic and athletic—with high levels of authentic pride, and to failure with low levels of authentic pride. These achievement-based fluctuations in authentic pride influence subsequent achievement behavior; individuals who feel low levels of authentic pride respond by planning to change their behavior, whereas those who experience high levels of authentic pride respond by planning to maintain similar behavior in future achievement contexts.

Most important, pride-informed changes in achievement behavior have functional consequences; in Studies 2a, 2b, and 2c,

individuals who changed their achievement behavior following poor academic performance as guided by low authentic pride performed better in subsequent achievement settings than did those who did not respond to their pride in this manner. These effects emerged alongside and independent of the positive effect of high self-efficacy on exam performance, and were stronger for authentic pride than for hubristic pride. In sum, the present research demonstrates the importance of responding to the informational value and motivational push provided by low authentic pride in achievement settings.

AUTHENTIC PRIDE IS A FUNCTIONAL BAROMETER PROMOTING ACHIEVEMENT

The present work advances our knowledge of authentic pride and achievement in a number of ways. First, the functional consequences of authentic pride were demonstrated for outcomes highly relevant to the lives of the individuals who participated in our studies, including adults who dedicated months of diligence to marathon training, and students at a top-tier university, where academic success is highly valued.

Second, in Studies 2a, 2b, and 2c, authentic pride predicted actual performance on a concrete achievement outcome. Prior studies have suggested that high levels of pride influence achievement by increasing the effort and persistence individuals devote to challenging activities (Sigall & Gould, 1979; Williams & DeSteno, 2008), and by increasing individuals' sense of self-efficacy and goal congruence when completing achievement tests (Herrald & Tomaka, 2002). However, no prior studies have examined whether these changes in motivation or cognition promote actual performance outcomes. Establishing the link between feelings of low authentic pride and achievement outcomes supports the claims and prior evidence suggesting that the social function of authentic pride is to promote status by virtue of prompting achievements in socially valued domains (e.g., Cheng et al., 2010; Tracy & Robins, 2004; Tracy et al., 2010).

Third, all four studies elucidated a mechanism by which low authentic pride promotes achievement: current levels of authentic pride were found to motivate individuals to tailor preparations for subsequent achievement contexts in a manner that proved beneficial. In contrast, in the only prior study that demonstrated an association between pride regarding one's prior performance and subsequent performance on a concrete achievement outcome, the mechanism by which pride promoted achievement was not examined (Pekrun et al., 2009). Our finding that authentic pride promotes achievement by gauging prior performance and motivating individuals to change their behavior accordingly is consistent with control-process theories of emotion, which suggest that unpleasant feelings motivate goal-directed behavior by signaling a lack of progress toward the goal (Carver & Scheier, 1990; Larsen, 2000; Leary et al., 1995; Simon, 1967). Importantly, this was shown to occur independently of, and alongside, an opposing process linking self-efficacy to achievement; *low* authentic pride promoted improved exam performance by prompting poor-performing students to change their studying behaviors, and *high* self-efficacy did the same. Although our results suggest that the positive effect of low authentic pride on performance is largely informational, it is likely that high authentic pride has motivational power, as well, in certain contexts. Indeed, prior work examining the relation between pride and achievement has found that feelings of high pride can serve as a direct motivational force propelling increased achievement-related behaviors (e.g., Pekrun et al., 2009; Williams & DeSteno, 2008).

Fourth, all four studies used a validated measure to assess authentic pride, allowing us to demonstrate that the critical emotional experience at play in this process is this form of pride in particular, rather than hubristic pride, or a mixture of authentic and hubristic pride. The fact that authentic pride showed stronger effects than hubristic pride on achievement outcomes, across four studies and a total sample of 1,132 participants, allows us to pinpoint authentic pride as the primary facet of pride that has a functional influence on achievement. Furthermore, in all studies we found that effects could be attributed to authentic pride experienced regarding prior achievements, above and beyond trait-authentic pride, providing further support for the specific process model outlined here. Finally, by replicating the majority of our findings across multiple studies and large samples, and using meta-analytic techniques to precisely estimate effect sizes in Studies 2a, 2b, and 2c, we can be confident in the robustness of the present results.

DISTINGUISHING THE AUTHENTIC "PRIDE-O-METER" FROM SIMILAR GAUGES

At a broad level, our mechanistic account of authentic pride mirrors prior accounts of emotion and goal pursuit (Carver & Scheier, 1990; Larsen, 2000; Leary et al., 1995; Schwarz, 1990; Simon, 1967). However, our account diverges from past accounts in several ways. First, our theory predicts *maintenance* of effort following success. Control-process theorists have argued that an individual who experiences pleasant emotion upon perceiving satisfactory progress toward a goal will subsequently reallocate effort expenditure to a different goal in order to optimize goal attainment across domains (Carver & Scheier, 1990; Simon, 1967). We found no evidence of such coasting or satisficing; students who experienced high authentic pride in response to a good performance on an exam reported intentions to study in the same manner for subsequent exams, and runners who experienced high authentic pride from success in their training reported intentions to train in the same manner over the subsequent months.

Second, our theory emphasizes the ultimate functionality of emotion-directed behavior, by focusing on the end consequence of improved achievement outcomes, rather than improved emotions. In contrast, several prior theories focus on the proximal

consequences of emotions, and assume that emotions guide behavior with the aim of attaining pleasant affective outcomes (e.g., Larsen, 2000; Schwarz, 1990; Schwarz & Clore, 1983). These accounts, though useful in explaining the operation of emotion regulation, offer little in the way of an ultimate explanation for the instrumentality of emotions. The answer to the question of why people seek to alleviate negative emotions cannot, in an ultimate sense, simply be that people want to feel positive emotions. Our account emphasizes the functional consequences for achievement that arise when individuals attempt to change *both* their behaviors and their feelings. Even if pleasant feelings, such as authentic pride, are a proximal goal of emotion regulation, striving to experience authentic pride must be accompanied by instrumental behaviors meant to improve achievement, otherwise the emotion regulation effort would have no ultimate payoff.

Authentic "Pride-o-Meter" and the Sociometer

One theory of emotion and goal pursuit that shares a good deal of common ground with our theory of authentic pride and achievement is Leary and colleagues' (1995) sociometer theory. The sociometer account suggests that self-esteem is an internal monitoring system that tracks an individual's inclusionary status and emits affective reactions in concordance with status fluctuations. Research supporting this theory has demonstrated that individuals who are liked by others in turn adopt more positive self-views (Leary, Haupt, Strausser, & Chokel, 1998; Srivastava & Beer, 2005), and individuals who experience low self-esteem tend to engage in social strategies aimed at boosting or protecting their self-esteem (Anthony, Wood, & Holmes, 2007; Leary et al., 1995). Several similarities exist between our account of authentic pride and the sociometer account of self-esteem. First, both of the posited barometers emit a pleasant emotional signal that informs individuals when they are meeting their goals to achieve or to increase inclusionary status. Second, low authentic pride and low self-esteem are both thought to result in compensatory behavior oriented toward changing the situational forces that gave rise to the warning signal; low authentic pride promotes adjustments in achievement behavior, whereas low self-esteem promotes a tendency to either derogate a group from which one has been excluded or to reintegrate with the group. Third, and in contrast to emotion-regulation theories (Larsen, 2000; Schwarz, 1990), in both of these models the attainment of the pleasant emotional feeling indicates progress toward a larger goal, rather than constituting the end goal itself.

Despite these similarities, however, and the generative influence that Leary and colleagues' (1995) theory has had on the present work, several key features distinguish authentic pride from the sociometer. First, the two barometers emit distinct signals. Authentic pride is a momentary emotional state and thus is expected to show substantial instability and fluctuation over time and context (Ekman, 1992; Kuppens, Oravecz, & Tuerlinckx, 2010). In contrast, self-esteem is a more enduring disposition, which, despite some fluctuations in response to shifts in appraised inclusionary status, exhibits substantial trait-like stability (Donnellan, Kenny, Trzesniewski, Lucas, & Conger, 2012; Kuster & Orth, 2013).

Second, the two barometers likely function to fulfill distinct human needs. Whereas the sociometer is thought to function primarily in service of the need to belong and affiliate with others (Baumeister & Leary, 1995; Ryan & Deci, 2000), the current research suggests that authentic pride may help fulfill individuals' fundamental need to achieve and feel competent (McClelland, 1961; Ryan & Deci, 2000). This is not to say that authentic pride does not also help fulfill belonging needs; in fact, researchers have argued that self-conscious emotions, including authentic pride, evolved at least in part for this purpose (e.g., Tracy & Robins, 2004). Indeed, prior research using an event recollection method has shown that positive events other than achievements are regularly cited as eliciting authentic pride—including events associated with relationships, family members, and moral values (Tracy & Robins, 2007, Study 3). These types of events, while not representing conventional instances of achievement (e.g., academic, athletic), constitute a demonstration of one's value to one's social group—be it a larger collective (e.g., a community food bank) or a specific interpersonal relationship (e.g., with one's child)—and the accrual of social value may be broadly construed as an achievement. Indeed, in some cultures, achievement is typically viewed in these broader terms; individuals in small-scale foraging societies gain status and influence through tasks such as catching large amounts of food or acquiring knowledge of plant-based medicine—tasks that directly help their social group (Reyes-Garcia, Molina, & Broesch, et al., 2008; von Rueden, Gurven, & Kaplan, 2008). From this view, authentic pride may serve as a functional barometer of success across social domains, which would suggest that authentic pride is an adaptive psychological mechanism fulfilling both the need to achieve and to belong.

If authentic pride indeed tracks shifts in inclusionary status in a similar manner to self-esteem, then it might best be understood as the affective mechanism underlying the sociometer. Prior evidence points to this possibility; authentic pride—measured as both a state and a trait—is strongly positively correlated with self-esteem, and researchers have suggested that it is the core emotion that underlies "genuine" self-esteem, or the component of self-esteem that is not shared with narcissism (Tracy, Cheng, Martens, & Robins, 2011; Tracy, Cheng, Robins, & Trzesniewski, 2009). Given that authentic pride, as a momentary emotional experience, is presumably more susceptible than self-esteem to transient shifts following achievement and relationship-relevant events (Donnellan et al., 2012; Ekman, 1992; Kuppens et al., 2010; Kuster & Orth, 2013), fluctuations in authentic pride may underlie individuals' responses to low self-esteem, and subsequent pursuit of increased inclusionary status.

FUTURE DIRECTIONS

Our work leaves open several questions for future research. First, although our theory emphasizes absolute levels of achievement as a determinant of authentic pride, it is possible that authentic pride is in fact a calibrated response to both absolute and relative levels of achievement. Specifically, control-process theorists have argued that positive and negative affect arise largely as a result of the speed at which one is progressing toward a goal, independent of one's absolute level of progress (Carver & Scheier, 1990). For example, an individual who performs poorly on a test in an absolute sense, but whose score nonetheless represents an improvement over his or her own past performance, would be expected to experience positive emotions indicating sufficient progress toward his or her goal. In contrast, our findings suggest that this same student would experience unpleasant feelings of low authentic pride, even if that poor performance represents an improvement (or decline) compared to a prior performance. The present data do not allow for a strong test of this issue, because participants who experienced success relative to their own prior standards were the same participants who experienced success in an absolute sense.[9] To test whether authentic pride is more functional in response to absolute or relative performance, future work should examine pride in the context of achievements where absolute and relative performance indices diverge (i.e., where individuals who perform well are not the same as those who exceed their expectations).

Future research is also needed to test whether authentic pride is a barometer of success in the absence of explicit performance feedback. In the present research, although authentic pride consistently emerged as a barometer of success, individuals reported their pride feelings after being made aware of their actual performance (i.e., exam score, training progress). If in future work authentic pride is found to provide feedback in the form of a gut feeling, in response to a more implicit sense of one's performance, or in the absence of explicit knowledge of this performance, this emotion would prove to be even more functional in promoting achievement. There are many instances in which individuals lack explicit metacognitive knowledge about their performance (Dunlosky & Lipko, 2007; Keleman, Frost, & Weaver, 2000; Kruger & Dunning, 1999; Mabe & West, 1982), and reliance on affective heuristics such as authentic pride may allow people to bypass the cognitive shortcomings that can hamper accurate self-knowledge.

Additionally, future studies are needed to examine whether other distinct emotions show similar functional effects on achievement behaviors and performance. Two emotions that are particularly likely to work in this manner are guilt and shame, which arise when individuals attribute a personal failure to an internal cause (Tracy & Robins, 2004, 2006). However, because shame is such a painful emotion to experience, individuals tend to respond by externalizing blame and avoiding responsibility, rather than by changing their own behavior (Tangney, Miller, Flicker, & Barlow, 1996; Tracy & Robins, 2006). In contrast guilt tends to motivate individuals to accept blame and change their subsequent behaviors for the better (Tangney & Dearing, 2002). As a result, we would expect that although individuals might experience both guilt and shame in response to a poor performance, only guilt will motivate adaptive behavioral change in the form of improved studying behaviors.

Finally, we were unable to assess the exact content of individuals' plans to change their achievement-related behavior (i.e., the specific behaviors that individuals intended to implement), although the results regarding changes in numbers of hours studied, in Study 2c, suggest a likely possibility. Future work is thus needed to more directly examine these behavioral strategies, in part to empirically confirm our assumption that intended behavioral change is enacted in the service of improved future performance. Our data do suggest that plans to change achievement behavior were beneficial in practice; in Studies 2a, 2b, and 2c, participants' plans to change their studying behaviors led to improved performance among low-performing students.

CONCLUSION

The present research provides the first empirical evidence that authentic pride gauges success in real-world achievement domains and, in turn, that low levels of authentic pride predict downstream achievement-oriented behavior and eventual performance in a functional manner. Together, these findings are consistent with the contention that authentic pride is a psychological adaptation that functions to promote achievement, in the service of helping individuals attain prestige-based social status. In sum, when we endeavor to succeed in an achievement domain—whether academic or athletic—we may be best served to follow our authentic pride and adjust our behavioral strategies accordingly.

Declaration of Conflicting Interests

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

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Notes

1. We used unstandardized residuals—rather than standardized residuals—to index fluctuations in authentic pride and perceived

competence across all studies, given that obtaining unstandardized regression coefficients would facilitate computation of meta-analytic effect sizes and confidence intervals in Studies 2a, 2b, and 2c. Notably, both types of residuals produce identical results.

2. We used unstandardized residuals of authentic pride and perceived competence, rather than simply including state authentic pride/perceived competence as predictors, and dispositional authentic pride/self-efficacy as covariates, in order to simplify model code (i.e., including only one residual variable, rather than both a state and trait variable). Importantly—and not surprisingly, given that these two methods are statistically identical—the pattern of results in all studies was the same when the state and trait variables were included separately instead of the residual terms.

3. The item "To what extent will your training over the next month be different than it was over the previous month" was accidentally omitted at the first follow-up, which likely accounts for the relatively low reliability at that assessment.

4. We also examined the effect of pride-driven training plans on performance outcomes, by regressing race times onto training-specific authentic pride and plans to train differently, while including the interaction term between training-specific authentic pride and plans to train differently. We did not find support for the prediction that training plans would predict race performance; plans to train differently did not predict race time ($b = –.003$, $p = .37$), and this effect was not moderated by training-specific authentic pride ($b = –.0002$, $p = .27$). Several factors likely contributed to these null results. First, plans to train differently were assessed concurrently with reports of training-specific authentic pride, and as a result may not have corresponded to individuals' actual training behaviors over the subsequent month of training. Second, individuals' race times were likely influenced by a wide range of factors in addition to their previous training plans (e.g., weather, course layout). For example, in the race in which the majority of participants competed (the 2013 Vancouver Half-Marathon), runners were held at the start line for an unexpected 20-minute delay due to a power failure, which likely affected performance. The first author was not pleased at this unforeseen development.

5. Study 2a was part of a larger project on motivation; data from an unrelated part of this larger project have been published in prior work (Elliot, Murayama, Kobeisy, & Lichtenfeld, 2015). None of the findings from the present study have been reported in any prior research.

6. Parameter estimates from models in which a concrete behavioral measure was used to index changes in studying behaviors were not included in our meta-analysis, given that our goal was to test whether our model held when a behavioral measure of studying behaviors was used, which required us to conduct an independent test of these new models.

7. Although the interaction term and indirect effect in the model with a behavioral measure of studying were marginally significant, they were approximately the same size as the meta-analytically derived estimates from our primary models. This suggests that the effect of authentic pride on achievement is of similar magnitude across both self-reported and behavioral measures of studying behavior, though we had substantially more power to detect this effect in our model with self-reported studying behavior.

8. Although low authentic pride led to improved performance for individuals who had previously performed poorly, these students on average continued to perform worse than students who had performed well on a prior exam. Specifically, across Studies 2a, 2b, and 2c, mean subsequent exam performance was 96.31 and 71.37 for high and low performers, respectively (high and low performers are defined as 1 standard deviation above and below the mean, respectively). After accounting for the effect of authentic pride, the predicted subsequent exam score for a low-performing student who listened to his or her (low) pride and changed his or her subsequent studying behaviors would have been 72.12, whereas the predicted subsequent exam score for a high-performing student who listened to his or her (high) pride and maintained consistent studying behaviors would have been 96.19.

9. In Study 1, to compute relative training success at follow-up 2, we regressed prior month's training success at follow-up 2 on prior month's training success at follow-up 1 and saved the unstandardized residuals (we did the same for follow-up 3). Relative prior month's training success was highly correlated with absolute prior month's training success at both follow-ups (rs = .77 to .86, ps < .001); as a result, relative and absolute training success showed similar correlations with training-specific authentic pride (rs = .69 to .73 with absolute success; rs = .57 to .60 with relative success; all ps < .001). We followed the same procedures for Studies 2a, 2b, and 2c, and again found that relative exam performance was highly correlated with absolute exam performance across studies (rs = .73 to .82, ps < .001), and as a result, relative and absolute performance showed similar correlations with authentic pride across studies (rs = .61 to .63 with absolute performance; rs = .52 to .55 with relative performance; all ps < .001). Although in both studies authentic pride was correlated slightly more strongly with absolute, compared to relative, performance, we hesitate to interpret these small differences as meaningful, particularly in light of the large overall correlations between authentic pride and both performance indices.

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