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The Unexpected Importance of Expectations in Self-Conscious Emotions

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Abstract

Prominent accounts suggest that people feel self-conscious emotions when they evaluate their self-caused, identity-relevant behavior as a success or failure (Tracy & Robins, 2004)—even if they expected to succeed or fail. We propose a novel, alternative account that builds on those prior by considering expectations. People feel self-conscious emotions when they evaluate their self-caused, identity-relevant behavior as discrepant from expectations, with discrepancies progressing towards identity-relevant goals eliciting pride and those regressing away from these goals eliciting shame and guilt. Six studies (total $N = 1{,}643$) provide support for this account. Studies 1-2 examine how expectation-behavior discrepancies influence emotions in hypothetical and recalled situations. Studies 3-4 manipulate behaviors or expectations to create discrepancies between them, then examine effects of discrepancies on self-conscious emotions. Study 5 uses a longitudinal, naturalistic design to test how these discrepancies track emotions outside the lab and over time. Study 6 directly tests predictions made by our account and competing accounts against each other. Across studies, a robust, causal, and distinct relationship emerged between expectation discrepancies and self-conscious emotions. When participants exceeded expectations, they felt greater pride compared to when they met or fell below expectations, and compared to other positive emotions; when participants fell below expectations, they felt greater shame or guilt compared to when they met or exceeded expectations, and compared to other negative emotions. These findings provide the first evidence for a new understanding of the cognitive elicitors of self-conscious emotions.

Keywords: self-conscious emotions, expectations, pride, shame, guilt

Statement of Limitations

This work has noteworthy strengths and limitations. Across studies, we measured self-conscious emotions in a way that speaks directly to real emotional experiences (Studies 2-5), by examining them in the context of real-world situations (especially Studies 3-5) and demonstrating that our predictions hold across individuals with different identities (e.g., runner, psychology student; see Studies 2, 4, and 5). Furthermore, to bolster statistical validity, our work used large samples (*N*s > 250 across studies) and within-subject designs to increase statistical power. However, Studies 1-5 are limited in that measures assessing non-self-conscious affect included a limited set of items: feeling *content* and *relieved* for positive affect and *angry* and *sad* for negative affect. This limitation was, however, addressed in Study 6, which included a wider variety of emotion items and still provided support for our hypotheses. An additional overarching limitation is our focus on U.S. and Canadian populations. Our theory has cross-cultural relevance, and is likely to generalize across cultures, but future studies are needed to directly test this possibility.

Introduction

In the 2009 NCAA men's basketball championship, top-ranked Duke University faced Butler, a small, lesser-known school whom few expected to qualify for the tournament. Many expected Duke to win. They did, but barely: Butler's potentially game-winning shot missed by inches. Emotions ran high after the game, yet both teams felt good. Unsurprisingly, Duke player Nolan Smith remarked, "I can't explain how happy I am" (O'Connell, 2010), but Butler also felt strong positive emotions; their coach reported being "proud of our guys" and player Matt Howard said he "couldn't be more proud" of Butler's performance (Logan, 2010).

These reactions are puzzling in light of emotion theories predicting that people feel pride upon succeeding, and shame or guilt upon failing, to meet goals relevant to their identity (Lewis, 2008; Tangney & Fischer, 1995; Tracy & Robins, 2004, 2007b).[1] Why did Butler seem to feel greater pride than Duke, despite the former's loss? We suggest that prior theories fail to explain such situations because they overlook expectations. That is, people may feel greater self-conscious emotions—pride, shame, and guilt—in response to an *unexpected* success or failure in an identity-goal-relevant domain.

Prior Appraisal Theories of Self-Conscious Emotions

Unlike other emotions, self-conscious emotions require self-evaluation: to feel these emotions, people must reflect on their behavior (Wicklund, 1975), interpret it as relevant to their identity, evaluate it against standards or goals important to that identity (i.e., make appraisals of identity-goal relevance and congruence; Higgins, 1987), and attribute it to internal causes (e.g., their effort or abilities; Weiner, 1985; see Tracy & Robins, 2004). In other words, prior theories

[1] We use *pride* to refer to positive – and *shame and guilt,* negative – feelings about the self. Prior work reveals distinctions within these emotions (e.g., authentic vs. hubristic pride, shame vs. guilt; Tangney & Tracy, 2012; Tracy & Robins, 2004b); replicating those distinctions is outside the scope of the present work; see SOM for more detail.

suggest that self-conscious emotions are most likely to occur when people evaluate their behavior in the context of their *identity-relevant goals*—standards related to who they want or believe they ought to be (Higgins, 1987; Tracy & Robins, 2004). In this view, events that are identity-goal relevant, congruent, and attributed to the self, such as success, elicit pride; events that are identity-goal relevant, incongruent, and attributed to the self, such as failure, elicit shame or guilt. The question of whether a given success or failure was *expected* is not relevant.

In contrast, we suggest that, in addition to identity-goal relevance, identity-goal (in)congruence, and internal attributions, people must consider whether their behavior met their expectations for it. Discrepancies from expectations that progress individuals towards the achievement of identity-relevant goals (i.e., exceeding one's expectations) should elicit greater pride compared to simply meeting one's expectations for achieving identity-relevant goals. Conversely, discrepancies from expectations that regress people further away from their identity-relevant goals (i.e., falling below one's expectations) should elicit greater guilt and shame compared to meeting one's expectations for failing to achieve identity-relevant goals. By accounting for this novel appraisal dimension—expectation violation—we aim to provide a more nuanced account of the precise cognitive antecedents needed to elicit self-conscious emotions, and to unite currently disparate literatures on self-conscious emotions and expectations.

Expectations

Expectations are often-implicit beliefs about how one might be or behave.[2] People have many identities (e.g., *generous*), each of which entails expectations that come to mind when that identity is salient (e.g., *I expect myself to give to others*; Markus, 1977). Expectations can draw on people's prior behavior (*I am typically very generous*), their peers' behavior (*I am more*

[2] People hold expectations about the external world and themselves. Our theorizing concerns the latter—we use the term expectations throughout to mean expectations *about the self*.

generous than my neighbors), and obligations associated with their identity (*my moral values prescribe generosity*; Morina, 2021).[3]

Although expectations prototypically involve beliefs about the future (Olson et al., 1996), they also influence evaluations of past behavior by informing counterfactual comparisons (Miller et al., 1990). To evaluate their behavior, people generate a counterfactual of how they might have behaved, based on their expectations (Quillien & Lucas, 2023). They then compare this expected behavior with how they actually behaved, deciding whether the two are (in)congruent (Jones & Davis, 1965; Kelley & Michela, 1980; Morina, 2021). In this way, our theory emphasizes retrospective expectations—a person's beliefs in hindsight about how they would have expected themselves to behave.

When people behave consistently with their expectations (i.e., meeting expectations), they feel affirmed in their existing self-perceptions and less self-aware (Wicklund, 1975). Self-conscious emotions require self-awareness (Tracy & Robins, 2004), so meeting expectations might fail to elicit or more weakly elicit them, compared to when expectations are violated. For example, an athlete who won a race and views competitive running as a core part of his identity (high identity-goal relevance) might appraise his victory as aligned with his goals (identity-goal congruence), and attribute this win to his own effort and training (internal attribution). Yet, he might still feel only low to moderate pride if he has won similar races in the past, and winning the race was therefore expected. In contrast, when people violate expectations (e.g., by winning a more competitive race, or losing a race they expected to win), they are more likely to turn inward, reflecting on and evaluating themselves (Wicklund, 1975). Simply being wrong can be a

[3] They can also draw on what people think others expect of them (Higgins et al., 1986), but only if those expectations are internalized (e.g., feminists might not feel ashamed for failing to uphold cultural gender expectations that they reject).

negative experience (Aronson, 1969; Olson et al., 1996), but, beyond those feelings, expectation discrepancies might elicit additional specific emotions. Namely, when behavior-expectation discrepancies are attributed to internal causes and evaluated as relevant to identity goals, individuals may make an emotionally charged self-evaluation—the core of the self-conscious emotional experience (Lewis, 2008).

Prior research has discussed the relevance of goals, standards or aspirations to emotion elicitation (e.g., Higgins, 1987; Carver & Scheier, 1990), but expectations meaningfully differ from goals. Goals are desired events (Austin & Vancouver, 1996), whereas expectations are beliefs about the realistic likelihood of events occurring, and are thus more tightly calibrated to reality (Olson et al., 1996). Prior theorizing suggests that people evaluate themselves by comparing their behavior with identity-relevant goals (e.g., Higgins et al., 1987; Tracy & Robins, 2004), but we further suggest that they also compare it to how they expected themselves to behave.

Practically, people often set goals that they expect to meet. For example, many people aspire and expect to brush their teeth twice daily. We would not predict intense pride from achieving this expected goal, but people also often hold goals that they do not expect to meet. When people perform better than expected (given their prior behavior, their peers' behavior, etc.), we predict that they will feel especially proud, regardless of whether they meet their goal. When expectations are violated in an identity-goal-congruent direction, greater pride is predicted, and when expectations are violated in an identity-goal-incongruent direction, greater guilt and shame are predicted. These predictions fit with prior emotion accounts suggesting that faster- or slower-than-expected goal progress elicits positive or negative affect, respectively (Carver & Scheier, 1990); however, these prior theories suggest that expectation discrepancies

influence generalized affect (e.g., feeling good or happy) and not self-conscious emotions *specifically* (e.g., Theriault et al, 2020; Wicklund, 1975).

In summary, although expectations are related to goals, expectation discrepancies differ meaningfully from the established appraisal dimensions of identity-goal relevance and identity-goal congruence. In contrast to these prior dimensions that focus on whether an event or behavior is congruent or incongruent with an ideal self-standard, or identity goal, appraisals of expectation discrepancy are focused on whether the event or behavior is consistent with, or discrepant from, what the individual expected—with expectations typically based on one's past performance or performance by similar peers. Our theorizing thus goes beyond prior work to distinctively predict that, once people identify an event as internally caused, identity-goal relevant, and identity-goal (in)congruent, they additionally appraise it as meeting or violating (i.e., exceeding or falling below) their expectations. This appraisal is predicted to influence the intensity of self-conscious emotions experienced, above and beyond the effects of prior appraisals.

Relevant Evidence

Several prior literatures indirectly support our novel account. Literatures on self-consistency and self-verification, social comparison, and moral behavior and sociocultural roles, respectively, map onto three distinct sources of expectations: prior experience, others' behavior, and obligations. Similarly, research on self-efficacy highlights four sources of expectations that shape beliefs about efficacy (Bandura, 1982): prior performance, similar others' performances, learned beliefs about what one should be able to do, and physiological state. The first three of these echo the three sources highlighted above, while the fourth fits with our claim that people adjust their expectations in response to in-the-moment contextual information (e.g., experienced task difficulty, physiological arousal). Synthesizing these literatures, scholars have noted that

violating each expectation source influences self-evaluations (Morina, 2021). However, scholars have not considered whether such violations consequently elicit self-conscious emotions.

Table 1 provides examples of situations that lead to expectation violations based on each possible source of expectation, along with prior evidence of effects on emotions. Across sources, exceeding expectations typically elicits pride (except for the case of obligations; see Table 1) and falling below them typically elicits shame and guilt. Notably, although the cited studies provide data consistent with our theorizing, they do not directly test our theory, in part because they rarely measure both self-conscious and non-self-conscious emotions, thus precluding the critical test of whether self-conscious emotions arise most distinctively in response to perceived expectation discrepancies.

Table 1

Summary of Evidence Demonstrating Emotional Responses to (Un)expected Behavior

Expectation Source	Exceeding expectations		Meeting expectations		Falling below expectations	
	Example	Emotion, Evidence	Example	Emotion, Evidence	Example	Emotion, Evidence
Prior behavior	Improve; achieve something new; develop a novel skill or ability; cultivate better habits or traits	Pride (Weidman et al., 2016; Williams & DeSteno, 2008; Buechner et al., 2018; Buechner et al., 2019; Gürel et al., 2020) Positive feelings about self (Wilson & Ross, 2001; Albert, 1977)	Behaving consistently with how one typically does (e.g., repeating a past achievement, demonstrating a familiar skill, performing as well as usual)	Expected success: Joy, pleasantness (Winkielman et al., 2002) Authentic (Jongman-Sereno & Leary, 2019; Kraus et al., 2011; Sedikides et al., 2017) Relief, less anxious (Stets & Burke, 2000; Swann, 2012; Talaifar & Swann, 2020) Expected failure: Depressed, sad, unpleasant, yet blunted negative self-feelings due to affirmation of self-perceptions (Jussim et al., 1995; Swann, 2012; Swann et al., 1987)	Decline over time; fail in ways one typically does not; cultivate bad habits or traits	Shame and guilt (Bennett et al., 2017; Gürel et al., 2020; Morina, 2021; Turner et al., 2002; Turner & Schallert, 2001) Negative feelings about self (Wilson & Ross, 2001; Albert, 1977)
Social comparison	Being / behaving relatively better than others; winning in competition	Pride (Buechner et al., 2018, 2019; Diel et al., 2021; Exline & Lobel, 1999; Gürel et al., 2020;	Being/behaving relatively equivalent to others	Lateral comparisons: Happy, encouraged, pride not predominant	Being/ behaving relatively worse than others; losing in competition	Shame and guilt (Buechner et al., 2019; Gilbert, 2003; Lim & Yang, 2015; Smith, 2000; Tracy

		Smith, 2000; Tesser & Collins, 1988; Thøgersen-Ntoumani et al., 2018; Tracy & Matsumoto, 2008; van Osch et al., 2018; Webster et al., 2003)		(Tesser, 1988; Wheeler & Miyake, 1992) Success/failure when most others succeed/fail: External attributions that suppress self-conscious emotions (Tracy & Robins, 2004, 2007b; Weiner, 1985)		& Matsumoto, 2008)
Obligations	Unlikely because obligations proscribe behavior, making it difficult to exceed them (e.g., one cannot lie less than never), or provide minimum standards, so people aim to meet, not exceed, expectations (Cornwell & Higgins, 2015; Kessler et al., 2010; Zlatev et al., 2019).	When other factors make meeting an obligation less expected (e.g., temptation): Pride (Hofmann & Fisher, 2012; Hofmann et al., 2013)	Doing what one feels they ought to do	Pleasant, warm glow (Andreoni, 1990) Pride at similar levels to other positive feelings (Buchtel et al., 2018; Brockner & Higgins, 2001)	Failing to do what one feels they ought to do	Shame and guilt (Brockner & Higgins, 2001; Keltner, 1996; Lindsay-Hartz, 1984; Siemer et al., 2007; Stets & Carter, 2012; Tangney & Fischer, 1995; Tomasello, 2020; Tracy & Robins, 2006)

Building on these prior findings, our theory predicts the following preregistered hypotheses: (a) self-caused, identity-goal-relevant, and identity-goal-(in)congruent events that violate one's expectations will elicit greater self-conscious than non-self-conscious emotions, and (b) self-conscious emotions will be greater in response to events that violate expectations compared to those that meet them. Six preregistered studies tested these hypotheses, by measuring both forecasted and experienced emotions and using diverse methods: correlational approaches, tightly controlled lab experiments with behavioral dependent variables, and a real-world study using a longitudinal design. All six studies are reported in this manuscript with preregistered materials and *a priori* predictions, sample size justifications, and analysis plans. Data and code can be found here on the Open Science Framework (OSF).

Study 1

Participants anticipated hypothetical individuals' emotional responses to having exceeded, met, and fallen below expectations. We hypothesized greater anticipated pride (shame and guilt) when the individual had exceeded (fallen below) expectations.

Method

We preregistered materials, *a priori* predictions, analysis plans, and sample size justifications. With an analytic sample of 279 participants, we exceeded the threshold of 250 participants required for stable correlation estimates (see Schönbrodt & Perugini, 2013).

Participants and Procedure

For sample characteristics for Study 1 (and for Studies 2-4 and 6), see Table 2. We recruited participants via CloudResearch in late 2019, before an influx of bots caused data concerns with this platform (Chmielewski & Kucker, 2020), and used screens to improve data quality (e.g., >90% approval rate, block users with duplicate IP addresses and from suspicious

geolocations). Following our preregistration, we excluded participants who failed an attention check. For this check, participants saw a sizable block of text, which included instructions to select a specific response option and type a short phrase.

Table 2

Sample Characteristics, Studies 1-4, 6

			Exclusions based on						
Study	Source	Initial N	Attention check	Data Quality	Suspicion check	Unique Criteria	Final N	Gender	Age
1	MTurk	306	27	0	-	-	279	40% men, 59% women, 1% non-binary	34.1
2	MTurk	303	13	4	-	44	251	42% men, 58% women	36.2
3	Under-graduates	304	15	12	20	-	263	27% men, 72% women, 1% non-binary	22.2
4	Under-graduates	404	27	17	57	3	305	16% men, 83% women, 1% non-binary	20.5
6	Prolific	326	9	5	-	21	291	48% men, 51% women, 1% non-binary or agender	43.2

Note. Data quality indicates the *N* who self-reported that we should exclude their responses due to low quality. Cells with a hyphen indicate that the exclusion criteria were not used in a given study. Study 2's unique criteria required that we exclude written responses that either did not follow directions or were incomprehensible. Study 4's unique criteria required that we exclude anyone who experienced technical difficulties during the study session, thereby invalidating their responses. Study 6's unique criteria required that we exclude anyone who showed low English comprehension, incorrectly identifying the referent of a pronoun in a sentence with multiple actors; Study 6's attention check differed, instead asking participants to select a particular scale point.

Participants reported demographics then read a series of six vignettes presented in randomized order. Each vignette depicted a different value domain; one was relevant to achievement while the other five each reflected one of the five moral concerns outlined in the Moral Foundations Theory (care, fairness, loyalty, authority, and purity; Graham et al., 2013); we drew from moral values to test for generalizability across behavior domains, and to examine cases in which moral behavior could elicit self-conscious emotions (though as noted earlier, we

suspect it often does not). For generalizability, we developed three scenarios for each domain, randomly assigning participants to view one (see Appendix A for all vignettes).

Each vignette described a hypothetical target's self-concept and expectations for their self, as well as a situation relevant to the target's self-concept. Each vignette listed three alternative endings, manipulated to describe the target (a) exceeding, (b) meeting, or (c) falling below expectations. Importantly, these scenarios were designed to hold constant whether the target's behavior was congruent (in the case of pride) or incongruent (in the case of shame/guilt) with identity goals, and varied only whether this behavior exceeded, fell below, or met their expectations.

Participants read all three alternative endings and, for each, predicted how intensely the target would feel each of eleven emotions (*1 = Not at all*, *7 = Extremely*). They completed the scale once per vignette ending, then completed attention and quality checks and received compensation. In total, they provided scale ratings eighteen times (three endings for each of six vignettes); this repeated-measures design provided thousands of observations, ensuring substantial statistical power.

Measures

As preregistered, we computed several composite variables: *pride* (*M* of "proud", "good about his/herself"; α = .90), *shame and guilt* (*M* of "ashamed", "guilty"; α = .87), *positive affect* (*M* of "content", "relieved"; α = .72), and *negative affect* (*M* of "angry", "sad"; α = .78). Three noteworthy details about these emotion items apply to this and all subsequent studies. First, all studies also included "authentic," "indifferent" (except Study 5), and "surprised" as exploratory measures. Second, the Supplementary Online Material (labelled SOM hereafter) reports descriptive statistics (*M, SD*) for each emotion item within each condition (except Study 5, which

did not use different conditions; there, we report model-implied statistics). Third, for any critical tests reported here involving composite variables, the SOM reports re-analyses using each individual item from the composite instead (when doing so, nearly identical results emerged).

We considered several factors when choosing these emotion items. To index self-conscious emotions, we used face-valid terms (*pride, shame, guilt*) as well as *good about him/herself* (a common phrase used to express pride). To provide meaningful comparisons, we chose other (non-self-conscious) emotions that parallel our focal self-conscious emotions in valence (i.e., pleasantness) and relevance to expectations and goals, but that are other-directed, reflecting the key difference between self-conscious and other emotions (Tracy & Robins, 2004). We avoided items that convey general positive or negative affect (e.g., happy, good, bad), as these are part of a self-conscious emotional experience (i.e., pride feels pleasant and good; Weidman & Tracy, 2020), and because people could endorse these items to indicate feelings about themselves; it is for this reason that the item *good about him/herself* specified the self as target.

Positive Affect (Relief, Contentment). For comparisons with pride, we chose two positive, low-arousal non-self-conscious emotions: relief and contentment. Relief is elicited by successful, better-than-expected outcomes (e.g., successfully completing an aversive task or avoiding failure; Sweeny & Vohs, 2012). When people meet or exceed expectations, they may see this outcome as better-than-expected and feel relieved (e.g., relief upon completing a time-consuming goal; relief at avoiding unfulfilled obligations). Likewise, contentment is a positive emotion akin to joy or happiness (Diener et al., 2010; Weidman & Tracy, 2020) that often emerges when people successfully meet their goals and needs (Cordaro et al., 2016). Thus, both relief and contentment are positive emotions that people might feel when they succeed in ways

that meet or exceed expectations. They are not felt about the self, however, so including them allowed us to test whether exceeding expectations elicits positive self-conscious emotions more than similarly positive but non-self-conscious emotions that are also likely to be induced by success. In addition, they are both low-arousal emotions, so are not part of the high arousal positive emotional experience that often co-occurs with authentic pride (Tracy & Robins, 2007), allowing us to statistically control for them without removing potentially meaningful covariance.

Negative Affect (Anger, Sadness). When people fail to achieve their goals, they often feel either angry—as in cases when their goals seemed to be blocked or impeded (Lewis, 2010)—or sad, as in cases when they are disappointed at a worse-than-expected outcome (Shirai & Suzuki, 2017; van Dijk & Zeelenberg, 2002). Falling below expectations could therefore elicit either of these negative emotions. Yet neither is self-directed; by including them, we could test whether falling below expectations elicits shame and guilt more than similarly negative, failure-induced emotions.

Transparency and Openness

Adhering to Journal Article Reporting Standards (JARS; Appelbaum et al., 2018), Study 1 is reported with preregistered materials and *a priori* predictions, sample size targets, and analysis plans. All analyses in the main text were preregistered unless otherwise noted as exploratory. All data and code have been uploaded in a repository hosted on OSF. Analyses used R, version 4.2.1 (R Core Team, 2020). Packages required to reproduce analyses for all studies in this paper are listed in the R code file on OSF.

Results

For all results reported in the main text, analyses were preregistered unless otherwise noted. Multilevel models were tested using the *lme4* package (Bates et al., 2016) and model estimates were calculated using *emmeans* (Lenth et al., 2023).

We first assessed participants' beliefs about the emotions people experience when they meet vs. violate expectations. Figure 1 shows mean estimates of emotion intensity across conditions, without covariates included. A multilevel model predicted pride from expectation discrepancy (*exceed, meet,* or *fall below*; *exceed* as reference) and included random intercepts for participant and value domain; see Table 3. As predicted, participants believed that targets would feel greater pride when they exceeded expectations than when they met or fell below them. Next, an identical multilevel model predicted shame and guilt (*fall below* as reference); see Table 3. Again, as predicted, participants believed targets would feel greater shame and guilt when they fell below expectations than when they met or exceeded them, see Figure 1. Put differently, participants' intuitions fit our hypotheses: They believed that someone who had violated their self-expectations would feel greater self-conscious emotions, with exceeding expectations expected to elicit greater pride and falling below expectations expected to elicit greater shame and guilt.

Table 3

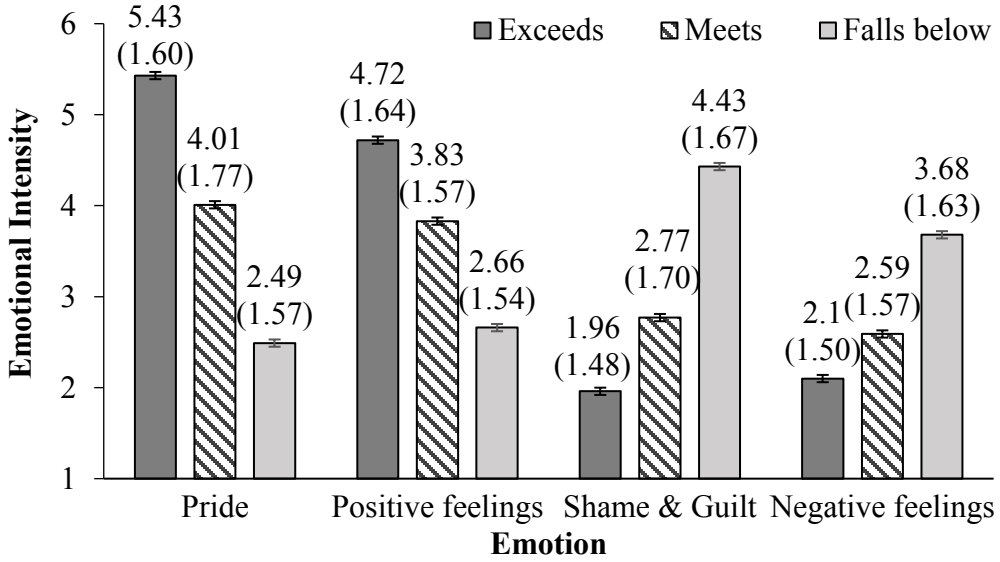
Intensity of Emotions Across Conditions, With and Without Covariates, Study 1

Outcome (covariate)	Comparison	*b*	*SE*	*t*	*p*	*d*
Pride	Meet	-1.42	0.051	-28.01	< .001	-0.97
	Fall below	-2.95	0.051	-57.99	< .001	-2.00
Pride (positive affect)	Meet	-0.77	0.038	-20.17	< .001	-0.72
	Fall below	-1.44	0.043	-33.54	< .001	-1.35
Positive affect (pride)	Meet	0.05	0.037	1.27	.206	0.05
	Fall below	-0.11	0.045	-2.56	.010	-0.11
Shame and guilt	Meet	-1.66	0.048	-34.55	< .001	-1.19
	Exceed	-2.47	0.048	-51.41	< .001	-1.78
Shame and guilt (negative affect)	Meet	-0.93	0.041	-22.42	< .001	-0.82
	Exceed	-1.41	0.044	-32.33	< .001	-1.24
Negative affect (shame and guilt)	Meet	-0.18	0.039	-4.65	< .001	-0.18

	Exceed	-0.23	0.044	-5.32	< .001	-0.23

Figure 1

Emotion Intensity Across Expectation Conditions, Study 1



Note. Error bars represent standard errors. Means appear above their respective bars and standard deviations appear in parentheses below the mean.

Next, we tested whether these effects were specific to self-conscious emotions, emerging even when accounting for shared variance with other non-self-conscious emotions.[4] To do so, we tested two exploratory multilevel models, each with expectation discrepancy as the predictor (*exceed* as reference condition) and nesting within scenario value domain and participant. The first model predicted pride with positive affect as a covariate; the second predicted positive affect with pride as a covariate. Supporting our theorizing, even when controlling for shared variance

[4] We preregistered a model predicting self-conscious emotions controlling for affect, but did not preregister a model with these variables reversed. By testing both, we can better compare how robust our focal relationship is. Likewise, to address this same question in Studies 2-4, we preregistered 2x2 (positive vs. negative x self-conscious vs. non-self-conscious) within-subjects ANOVAs, but instead tested two linear models, as reported here. Compared to ANOVA, linear models more directly test our hypotheses and allow us to use a consistent analytic strategy across studies. The SOM reports results from our preregistered ANOVAs, which also support our predictions and replicate the patterns observed from linear models.

with positive affect ($b = 0.73$, $p < .001$), exceeding expectations elicited greater pride than meeting or falling below them. In contrast, when predicting positive affect while controlling for pride ($b = 0.66$, $p < .001$), these relationships did not emerge; see Table 3. Instead, participants believed the target would feel equally strong positive affect when meeting and exceeding expectations, and the least positive affect when falling below them.

We next ran the same models but predicting negative self-conscious and non-self-conscious emotions. Supporting our theorizing, even when controlling for negative affect ($b = 0.67$, $p < .001$), falling below expectations elicited greater shame and guilt than either meeting or exceeding them, both ps $< .001$. These relationships were considerably weaker when instead predicting negative affect and controlling for shame and guilt, $b = 0.55$, $p < .001$, though falling below expectations still led to greater negative affect than did meeting or exceeding them; see Table 3. Given that the relationship between expectation discrepancies and self-conscious emotions held when controlling for shared variance with non-self-conscious emotions, but the converse relationship was consistently weaker or absent, participants' intuitions seemed to align with our theorizing that expectations influence self-conscious emotions specifically.

Discussion

These results support our account's utility over prior ones suggesting that self-conscious emotions occur in response to success or failure, regardless of expectations. Accounting for expectations added predictive utility beyond previously theorized appraisals. However, participants responded to all three expectation conditions, potentially amplifying differences between them; Study 2 addressed this limitation.

Study 2

Study 2 extended Study 1 by using a between-subject design and assessing firsthand emotional experiences.

Method

We preregistered predictions, *a priori* power analyses, materials, and analysis plans.

Participants and Procedure

In late 2019, we recruited participants from CloudResearch who had not participated in Study 1, using the same data quality screens as in Study 1. As preregistered, we excluded anyone who failed an attention check or reported providing low quality data (as in Study 1) or provided incoherent responses to writing prompts.

Participants reported demographics and responded to the 10-item Rosenberg Self-Esteem scale (RSE; Rosenberg, 1965). Self-esteem often strongly relates to both pride and shame (e.g., Tracy et al., 2009) so, in this and subsequent studies (except 6, which did not assess self-reported emotions), we preregistered our plan to control for self-esteem,[5] ensuring that any effects of expectation violations on self-conscious emotions emerged independent of this trait.

Next, participants responded to guided prompts to help them recall a time in which they felt they had exceeded, met, or fell below expectations. The prompt asked them to identify a changeable trait (e.g., *caring, creative*; contrasted with relatively static traits like *tall, old*) that described them; this allowed us to subsequently ask them to write about a time in which they behaved atypically for that trait. Next, to make the trait more concrete, they took a moment to reflect on the behaviors or abilities they expected of themselves as someone with that trait.

[5] Self-esteem did not meaningfully moderate results in any study, and all of our central results hold when not controlling for self-esteem. Given that we preregistered our plan to include self-esteem as a covariate, we report only results of models that did so, unless stated otherwise

Next came our between-subjects manipulation: We instructed participants to recall a situation in which they either exceeded, met, or fell below their self-expectations for that trait. For example, in the *exceed expectations* condition, participants read the following:

> Now that you've thought about what you expect of yourself as someone who is [caring], take a moment to recall a recent situation where your behavior or performance was *different from what you expected, but in a good way.* In other words, think of a time when you, as someone who is [caring], behaved or performed *better than what you expected of yourself.*

In the *meet expectations* condition, the italicized sections read, "*the same as what you expected*" and "*in line with your own expectations*." In the *fall below* expectations condition, they read, "*different from what you expected, but in a bad way*" and "*worse than what you expected of yourself*." Participants had five minutes to write about this situation, after which they reported the intensity with which they had felt 15 emotions in that situation (*1 = not at all, 7 = Extremely*). We included all emotion items from Study 1 plus four new items to separately measure the more confident, achievement-oriented facet of pride known as "authentic pride" and the more arrogant, egotistical facet, known as "hubristic pride" (items were taken from the Authentic and Hubristic Pride Scales; Tracy & Robins, 2007), allowing us to exploratorily test whether expectations influence one or both facets of pride. As preregistered, we created composites from the same items as in Study 1 (*pride*: α = .93; *shame and guilt*: α = .91; *positive affect*: α = .72; *negative affect*: α = .74; *authentic pride*: α = .91; *hubristic pride*: α = .79).

Transparency and Openness

Adhering to JARS (Appelbaum et al., 2018), Study 2 is reported with preregistered materials and *a priori* predictions, power analyses for sample size justifications, and analysis plans. All analyses in the main text were preregistered unless otherwise noted. All data and code

(listing required packages) have been uploaded in a repository hosted on OSF. Analyses used R, version 4.2.1 (R Core Team, 2020).

Results

We first tested whether people recalled feeling greater pride when they had exceeded expectations than when they had met or fell below them. A linear model predicted pride from expectation discrepancy (*exceed* as reference condition), controlling for self-esteem; see Table 4. Figure 2 shows mean estimates of emotion intensity across conditions. As predicted, participants recalled feeling greater pride when exceeding expectations than when meeting or falling below them.[6] We next tested an identical model but predicted shame and guilt, with *fall below* as the reference condition. As predicted, participants felt greater shame and guilt when they fell below expectations than when they met or exceeded them; see Table 4. Taken together, participants' firsthand reports support our theorizing, as they recalled feeling stronger self-conscious emotions when they violated expectations than when they met them.

Table 4

Intensity of Emotions Across Conditions While Controlling for Self-Esteem, With and Without Additional Covariates, Study 2

Outcome (covariate)	Comparison	*b*	*SE*	*t*	*p*	*d*
Pride	Meet	-0.77	0.213	-3.61	< .001	-0.57
	Fall below	-3.77	0.209	-18.05	< .001	-2.81
Pride (positive affect)	Meet	-0.34	0.166	-2.07	.039	-0.33
	Fall below	-1.89	0.216	-8.74	< .001	-1.83
Positive affect (pride)	Meet	-0.16	0.163	-0.98	.330	-0.16
	Fall below	-0.49	0.239	-2.04	.043	-0.49
Shame and guilt	Meet	-2.95	0.209	-14.17	< .001	-2.25
	Exceed	-3.27	0.204	-16.04	< .001	-2.49
Shame and guilt (negative affect)	Meet	-1.68	0.228	-7.36	< .001	-1.48

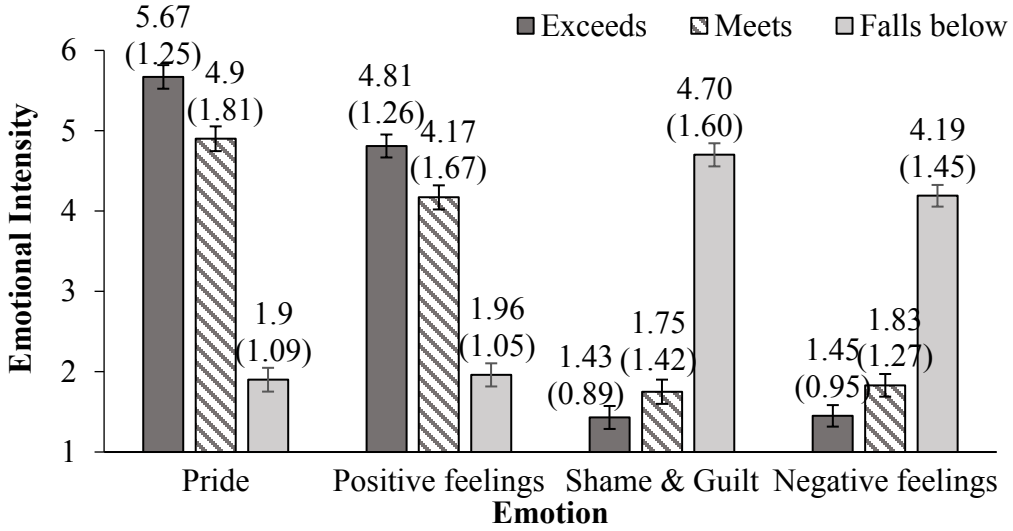
[6] In an absolute sense, the *meet* condition elicited intense pride, which we found somewhat surprising. To probe this unexpected result, we coded participants' written responses, and observed that some had in fact wrote about situations in which they exceeded expectations; see SOM. Upon removing these individuals, the difference in pride between the exceeds and meets condition grew from $d = .57$ to $d = .74$. For more detail, see SOM.

	Exceed	-1.79	0.240	-7.47	< .001	-1.58
Negative affect (shame and guilt)	Meet	-0.96	0.228	-4.19	< .001	-0.90
	Exceed	-1.19	0.237	-5.00	< .001	-1.12

Note. Models without covariates had 241 *df*. Models with covariates had 240 *df*.

Figure 2

Emotion Intensity Across Expectation Conditions, Controlling for Self-Esteem, Study 2



Note. Error bars represent the standard error. Means appear above their respective bars and standard deviations appear in parentheses below the mean.

Next, to determine whether these effects were specific to self-conscious emotions, we tested two exploratory models. Both were nearly identical to the model above predicting pride, but the first also controlled for positive affect, and the second instead predicted positive affect and controlled for pride. Supporting our theorizing, even controlling for shared variance with positive affect ($b = 0.66$, $p < .001$), participants recalled greater pride when exceeding expectations than when meeting or falling below them. When predicting positive affect and controlling for pride ($b = 0.63$, $p < .001$), the same relationships did not emerge: Participants felt equally strong positive affect when they recalled exceeding vs. meeting expectations, and less positive affect when they recalled falling below expectations, see Table 4.

We next ran the same models but with negative emotions. Supporting our account, controlling for negative affect ($b = 0.54$, $p < .001$), participants still recalled feeling greater shame and guilt when falling below expectations than when meeting or exceeding them; see Table 4. When predicting negative affect while controlling for shame and guilt ($b = 0.47$, $p < .001$), patterns were present but attenuated, suggesting that expectations were more robustly related to shame and guilt than negative affect. More broadly, these results support our claim that expectations influence self-conscious emotions distinctively, over and above non-self-conscious emotions.

Finally, to test whether observed effects for generalized pride reflect feelings of authentic or hubristic pride, we ran a model predicting each type of pride from expectation discrepancy and controlling for self-esteem; see Table 5. As with the generalized pride measure, participants recalled feeling greater authentic pride when exceeding expectations ($M = 5.56$, $SD = 1.41$) than when meeting ($M = 4.80$, $SD = 1.89$) or falling below them ($M = 1.99$, $SD = 1.12$). Interestingly, however, participants felt greater hubristic pride when falling below expectations ($M = 2.34$, $SD = 1.70$) than when both exceeding ($M = 1.83$, $SD = 1.18$) and meeting them ($M = 1.79$, $SD = 1.07$), $b = 0.55$, $p = .010$, $d = 0.41$; no difference emerged between the meeting and exceeding conditions. Some authors have suggested controlling for negative affect when investigating hubristic pride to statistically remove its negative connotations (Holbrook et al., 2014), but there was no relationship between expectations and hubristic pride after controlling for negative affect (comparisons between each expectation condition ps $\geq .402$). Although potentially interesting, in subsequent studies hubristic pride was either unrelated or inconsistently related to expectations, so we report results for this variable in the SOM and focus on authentic pride in the main text.

Notably, these results are also consistent with prior work showing that authentic pride, but not hubristic pride, reliably occurs in response to specific achievement-based outcomes (Tracy & Robins, 2007; Weidman et al., 2016). Hubristic pride is a more fragile and volatile form of pride (Dickens & Robins, 2022) that tends to be elicited by attributions to stable, global causes, like a person's stable ability or intelligence (Tracy & Robins, 2007). In this and subsequent studies, we manipulated pride using situations that encouraged people to make unstable, specific attributions, making authentic pride the most likely outcome.

Table 5

Intensity of Authentic and Hubristic Pride Across Conditions, Study 2

Outcome	Comparison	*b*	*SE*	*t*	*p*	*d*
Authentic Pride	Meet	-0.76	0.234	-3.27	.001	-0.51
	Fall below	-3.57	0.227	-15.72	< .001	-2.39
Hubristic Pride	Meet	-0.03	0.212	-0.15	.885	-0.03
	Fall below	0.52	0.206	2.52	.012	0.38

Note. Each model had 248 *df*.

Discussion

Study 2 supported our hypotheses using participants' recollections of situations they appraised as violating expectations. Given that participants likely recalled particularly memorable events, we can be fairly confident in their accuracy in reporting them (Turk et al., 2008). Nonetheless, these results speak only to *recalled* emotions, and not necessarily those felt *in the moment*. Furthermore, Studies 1 and 2 did not manipulate expectation violations, so we cannot know whether these violations *cause* self-conscious emotions.

Study 3

Study 3 experimentally tested whether expectation violations cause people to feel self-conscious emotions. Psychology students reported their expected performance on a psychology

test, took the test, received a score manipulated to violate or meet their expectations, then reported emotions.

Method

We preregistered predictions, *a priori* power analyses, materials, and analysis plans.

Participants and Procedure

We recruited undergraduate students for an online study advertised as a practice GRE (Graduate Record Examinations) Psychology subject test—a test sometimes used for graduate admissions in psychology programs. Given this cover story, all participants were majors in psychology or cognitive sciences and in the third year of their degree or later, to increase the likelihood that they would perceive their psychology GRE test performance as identity-goal-relevant. This is both an important precondition for self-conscious emotions (Tracy & Robins, 2004) and a way to increase statistical power, as the personal relevance of our manipulation likely increased its strength. Moreover, psychology students regularly take such tests, so we expected results to translate to real, commonly occurring situations. As preregistered, we excluded anyone who either failed an attention check or reported providing low quality data (as in prior studies), or who was suspicious of our manipulation or guessed our hypotheses.

Participants reported demographics, including their college major and year, and then completed a measure of their self-esteem (Rosenberg, 1965). Next, they reported their average grade in psychology courses to the nearest whole percent (for context, their university's psychology program required grades in each course to be normally distributed with a mean near 70%). This served as our measure of expectations, from which we aimed to manipulate participants' performance so it would violate or meet their expectations.

Participants had not studied for the GRE psychology subject test—few had even heard of it (only four reported having taken it before)—so we took steps to reinforce their typical grade as a valid source of expectations. We described the test as assessing basic knowledge from introductory psychology courses (which they, as students majoring in the subject in at least their third year, had completed). The instructions then directly stated that they could expect to score as well as their typical score:

> People who perform well in psychology courses also tend to perform well on the Psychology GRE. You mentioned earlier that your average grade in psychology courses is [75%]. Based on your average grade in psychology courses, you will likely earn a score near [75%]."

Participants had fifteen minutes to complete the seventeen-item test. Items came from practice GRE psychology subject tests available online (see link). After the test, they received a score that was manipulated in one of three ways (randomly assigned, between-subjects). In the *exceed expectations* condition, it was 10% higher than the average score they reported earning in prior psychology courses.[7] In the *fall below* condition, it was 10% lower. In the *meet* condition, it was randomly assigned to be either 1% higher or lower than their average. The lowest manipulated score that a participant received was 47; the highest was 100 ($M = 74.15$, $SD = 13.12$). To ensure that scores seemed realistic, participants in the *exceed* condition took a slightly easier test, and those in the *fall below* condition took a slightly harder test, than those in the *meet* condition. The website providing the test items listed the difficulty of each item, so we included a greater number of easy questions in the *exceed* condition (14 easy, 3 difficult) than in the *meet* condition (13 easy, 4 difficult), or the *fall below* condition (12 easy; 5 difficult).

[7] Nine participants reported averages above 90%, five of whom were randomly assigned to the *exceed* condition. They were told that they scored 100% on the practice GRE psychology subject test.

We assumed participants would appraise a 10% difference as violating (but not unrealistically different from) their expectations, and a 1% difference as meeting expectations; we used this slightly different score to avoid raising suspicion by telling them they had performed precisely at the level they told us was their average. To validate these assumptions, we included a manipulation check. Participants chose the best completion to the statement, "My performance on this test ___ my expectations" (*1 = Fell greatly below,* 4 = *Met*, *7 = Greatly exceeded*).

Participants then reported the intensity with which they felt each of sixteen emotions (*1 = Not at all*, *7 = Extremely)*. This included all Study 2 items plus one more: "disappointed in myself." We added this item to capture a milder negative self-conscious feeling that people might experience in response to a lower-stakes failure (e.g., subpar scores on a practice exam one had not prepared for), as opposed to the intense, socially undesirable feelings of shame and guilt (Tangney et al., 1996). Disappointment in itself is not a self-conscious emotion, but by specifying disappointment *at the self*, this item conveyed negative self-conscious feelings akin to shame and guilt. We therefore preregistered that we would include it in the *shame and guilt* composite (*M* of "ashamed", "guilty", "disappointed in myself"; α = .90). Also, given that Study 2 found identical patterns for generic pride items and authentic pride, we preregistered a *pride* composite using these four items (*M* of "proud", "good about myself", "accomplished", "confident"; α = .95; the SOM reports analyses showing similar patterns for each item). Finally, we created other preregistered composites as in Study 2 (*positive affect*: α = .79; *negative affect*: α = .85; *hubristic pride*: α = .83).

Finally, we probed participants' suspicions, asking "What do you think this study is about?" "How did you find the experience of completing the practice GRE questions?" and "Do

you think your score on the practice GRE questions accurately reflects your knowledge of psychology?" They answered attention and data quality checks (as in prior studies), then were debriefed and told their actual score.

Transparency and Openness

Adhering to JARS (Appelbaum et al., 2018), Study 3 is reported with preregistered materials and *a priori* predictions, power analyses for sample size justifications, and analysis plans. All analyses in the main text were preregistered unless otherwise noted. All data and code (listing required packages) have been uploaded in a repository hosted on OSF. Analyses used R, version 4.2.1 (R Core Team, 2020).

Results

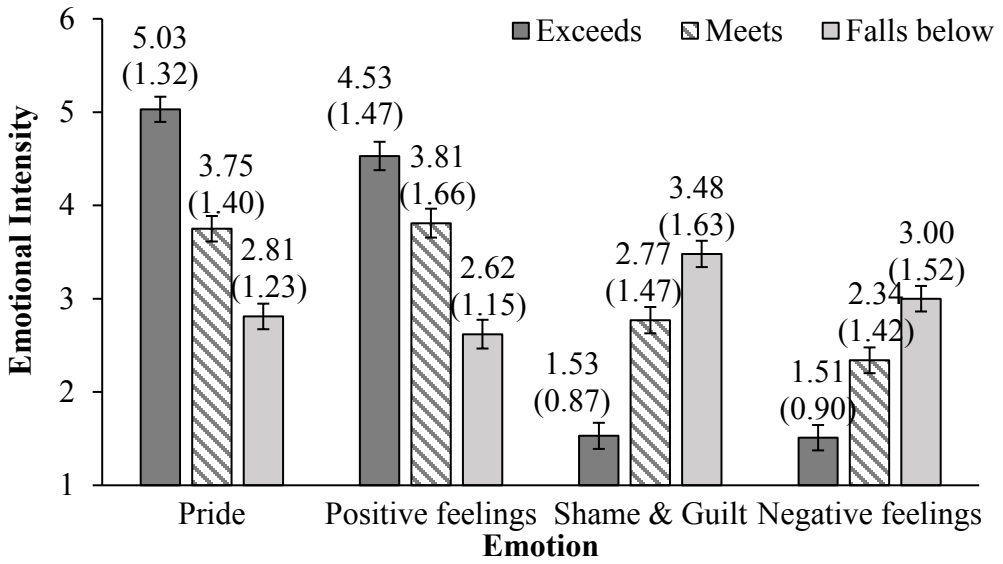
Our exploratory manipulation check compared how participants in each condition perceived their behavior. Two *t*-tests showed the manipulation was effective: Compared with participants made to meet expectations ($M = 4.19$, $SD = 1.32$), those made to exceed them ($M = 5.44$, $SD = 0.96$), perceived their behavior as better than expected, $t(153) = 7.13$, $p < .001$, $d = 1.09$, and those made to fall below them perceived their behavior as worse than expected ($M = 2.88$, $SD = 1.19$), $t(168) = 6.88$, $p < .001$, $d = 1.05$.

Next, we examined self-conscious emotions in each condition. A linear model predicted pride from expectation discrepancy (*exceed* as reference) controlling for self-esteem. Figure 3 shows mean estimates of emotion intensity across conditions. Participants felt greater pride when they exceeded expectations than when they met or fell below them; see Table 6. Next, a similar model predicted shame and guilt (*fall below* as reference). As predicted, participants felt greater shame and guilt when they fell below expectations than when they met or exceeded them. In

other words, experimentally induced expectation-behavior discrepancies *caused* people to feel self-conscious emotions in the moment when those expectations were violated.

Figure 3

Emotion Intensity Across Expectation Conditions, Controlling for Self-Esteem, Study 3



Note. Error bars represent the standard error. Means appear above their respective bars and standard deviations appear in parentheses below the mean.

Table 6

Intensity of Emotions Across Conditions Controlling for Self-Esteem, With and Without Additional Covariates, Study 3

Dependent variable emotion (covariate)	Comparison	*b*	*SE*	*t*	*p*	*d*
Pride	Meet	-1.28	0.193	-6.65	< .001	-1.01
	Fall below	-2.22	0.192	-11.56	< .001	-1.75
Pride (manipulated score)	Meet	-0.75	0.216	-3.47	<.001	-0.62
	Fall below	-1.32	0.264	-4.98	< .001	-1.08
Pride (positive affect)	Meet	-0.80	0.130	-6.14	< .001	-0.95
	Fall below	-0.94	0.145	-6.50	< .001	-1.13
Positive affect (pride)	Meet	0.36	0.156	2.32	.021	0.42
	Fall below	-0.03	0.177	-0.20	.844	0.04
Shame and guilt	Meet	-0.71	0.199	-3.53	< .001	-0.54

	Exceed	-1.95	0.198	-9.82	< .001	-1.49
Shame and guilt (manipulated score)	Meet	-0.36	0.209	-1.71	.088	-0.28
	Exceed	-1.10	0.275	-4.01	< .001	-0.87
Shame and guilt (negative affect)	Meet	-0.15	0.112	-1.30	.195	-0.20
	Exceed	-0.66	0.122	-5.42	< .001	-0.92
Negative affect (shame and guilt)	Meet	-0.08	0.110	-0.70	.482	-0.11
	Exceed	0.09	0.125	0.70	.485	0.13

Note. Pride and positive affect models with a covariate had 254 *df*; those without had 255 *df*. Shame/guilt and negative affect models with a covariate had 253 *df*; those without had 254 *df*.

These patterns are consistent with our theory but another possible explanation remains: Participants might be reacting to their absolute score (i.e., feeling proud of a high score, or ashamed of a low one), not its discrepancy from expectations. After all, manipulated scores were higher for participants in the *exceed* condition ($M = 85.97$, $SD = 9.07$) than in the *meet* ($M = 72.52$, $SD = 9.52$) or *fall below* ($M = 63.48$, $SD = 8.57$) conditions, ps < .001. As an exploratory test to rule this out, we re-ran the above analyses controlling for manipulated score; conceptually, this approach compares the emotional responses of three participants who scored the same but differ in whether their score was higher than, lower than, or about the same as, their expectations.

Identical patterns emerged for pride, which was greater among people who exceeded expectations than for those who met or fell below them, even when controlling for manipulated score, which also positively predicted pride ($b = 0.04$, $p < .001$); see Table 6. To illustrate, this result implies that two students—one whose typical psychology grade is 95% while the other's is 75%—who both earned an 85% on Study 3's exam would feel pride at different intensities, despite their equal absolute scores. This finding therefore demonstrates that violating expectations relative to one's own benchmark or standard, rather than an objective or socially normative metric, distinctively influences the experience of self-conscious emotions. Shame and guilt were also greater among people who fell below expectations than those who exceeded

them, even when controlling for their score, which negatively predicted shame and guilt (b = -0.04, p < .001). That said, when controlling for manipulated score, people who met vs. fell below expectations felt similar degrees of shame and guilt; effects were trending in the theorized direction but not significant, p = .088.

We next tested whether this relationship is specific to self-conscious emotions; that is, whether it was robust to controlling for shared variance with affect. An exploratory linear model predicted pride from expectation discrepancy (*exceed* as reference) controlling for self-esteem and positive affect, and another model predicted positive affect and controlled for pride; see Table 6. Supporting our theorizing, when controlling for positive affect (b = 0.67, p < .001), participants felt greater pride when exceeding expectations than when meeting or falling below them. When predicting positive affect controlling for pride (b = 0.85, p < .001), these relationships were either highly attenuated or absent: Participants felt the greatest positive affect when meeting expectations, more than when falling below, b = 0.40, p = .009, or exceeding them, b = 0.36, p = .021 (exceeding and falling below elicited positive affect to similar degrees). Thus, expectations were more robustly related to pride than to other positive emotions.

Turning to shame and guilt, we ran two similar linear models but swapped both positive self-conscious emotions and affect for their negative counterparts; see Table 6. Results partially support our theory: Controlling for negative affect (b = 0.86, p < .001), people felt greater shame and guilt when they fell below expectations compared to when they exceeded them. However, we did not support our prediction for the other comparison: Controlling for negative affect, people felt shame and guilt at similar intensities when they fell below vs. met expectations, p = .195. That said, when predicting negative affect and controlling for shame and guilt (b = 0.81,

$p < .001$), the same relationships were fully eliminated: people felt equivalent negative affect, regardless of how their behavior compared with expectations.

Study 4

Whereas Study 3 manipulated participants' (perceived) behavior to make it discrepant with their self-expectations, Study 4 manipulated their self-expectations to make them discrepant with their behavior. Study 4 also aimed to replicate these effects in the moral domain. Participants were asked to raise funds for charity then learned how much their peers had raised; this amount was manipulated such that participants exceeded, met, or fell below the expected amount set by peers.

Method

We preregistered predictions, *a priori* power analyses, materials, and analysis plans.

Participants and Procedure

We recruited undergraduates from the same university as in Study 3, precluding enrolment from Study 3's participants and allowing students whose major was not psychology. As preregistered, we excluded anyone who failed an attention or data quality check (as in prior studies), experienced technical difficulties during the study, guessed our hypotheses or was suspicious about our manipulation or donation task when probed.

Participants enrolled in an online study ostensibly piloting a visual numeracy task. They reported their demographics and self-esteem (Rosenberg, 1965). They then read about the numeracy task, in which they would see a series of images of various shapes in different colors. For each image, they had to count the number of shapes of a specific color (e.g., "How many red circles are presented in this image?"). We made this task exceedingly simple and boring so they

would not feel pride from simply completing it. They completed a sample version of the task to get a sense of what it was like.

We told participants that they only had to complete ten trials of the task to receive participation credit but could complete additional trials for payment. We also stated that the grant funding we had obtained only allowed us to pay participants by having them donate any funds raised to a university-approved charity. Beyond the required 10 trials, they could opt to complete up to 50 additional trials, with each trial earning $0.05 for a charity of their choice. We described the three charity options (food bank; environmental organization; poverty relief organization). We further told them that they would not be penalized for choosing to complete zero additional trials—they would simply advance to the final portion of the study.

Participants reported how many additional trials they wished to complete, then completed the required ten trials and their voluntary additional trials. Afterwards, if they had completed additional trials, they saw a summary of how much money they had raised, then chose a charity to receive these funds (stated amounts were actually donated to these charities after study completion). On average, participants raised nearly 1 dollar ($M = 0.97$, $SD = 0.87$), with 55 not raising anything and 54 opting to raise the full $2.50. All participants—whether they raised funds or not—then advanced to a page that delivered our manipulation. It described the total amount raised by all participants (including themselves) so far. Crucially, it also stated the average amount raised by other participants, which served as our manipulation. We varied the average number of trials purportedly completed by other participants, thereby drawing participants' attention to how much they might have been expected to raise for charity based on a comparison with similar others. Indeed, people regularly expect themselves to behave as well as similar

others (e.g., Bandura, 1982; Morina, 2021). In this way, this design is similar to that of prior studies manipulating social comparisons (e.g., Gerber et al., 2018).

Participants assigned to the *exceed* expectations condition read that they had raised $0.35 more than other participants. For example, if a participant in this condition had raised $0.75, they would read that, on average, other participants had raised $0.40. They also read a statement directly comparing theirs and other students' donations, putting the manipulation in concrete terms: "By completing 15 additional trials and donating $0.75 to charity, you were more generous than other [university] students who have taken this study." Participants assigned to the *meet* expectations condition read that they had raised $0.05 more or less (randomly assigned) than other students, and that their behavior was "about as generous" as other students'. Participants in the *fall below* expectations condition read that they had raised $0.35 less than others, and that their behavior was therefore "less generous." We assumed that participants would appraise a $0.35 difference as violating (but not unrealistically different from) their expectations and a $0.05 difference as meeting expectations.

Condition assignment depended, to a small extent, on how much money participants actually raised. If a participant raised from $0.40 to $2.10, they were randomly assigned to any condition. If they raised below $0.40 or over $2.10, our manipulation became unrealistic (e.g., if they raised $0.35, the *exceed* manipulation would imply others raised $0.00 on average), so they were randomly assigned to one of the two remaining plausible conditions. In total, 96 participants raised below $0.40 (48 each were randomly assigned to the *meet* and *fall below* conditions; 55 participants raised $0.00, 29 of whom were assigned to *fall below* condition and 26 to *meet* condition), and 54 raised over $2.10 (29 were randomly assigned to the *meet*

condition and 25 to the *exceed*). Excluding the non-randomly assigned participants does not substantially change results (see SOM).

Participants then reported the intensity with which they currently felt various emotions using the same items and scale as in Study 3. We created the same preregistered composites as in Study 3 (*pride*: α = .88; *shame and guilt*: α = .92; *positive affect*: α = .64; *negative affect*: α = .75; *hubristic pride*: α = .75). We asked about emotions at this point—*after* participants both behaved and considered how they might have been expected to behave—because our theory stipulates that expectancy-behavior discrepancies elicit self-conscious emotions, regardless of whether behavior or expectations come first (i.e., our theory allows for people to consider expectancies before behaving, as in Study 3, or after, as they did here). Thus, although we manipulated expectations *after* behavior had occurred, people could still compare the two *before* they experienced and reported emotions. More broadly, this design feature means that Study 4 serves as a conceptual replication of Study 3, with both studies testing whether feedback that contributes to expectation-behavior discrepancies shapes emotions.

Finally, participants answered filler questions about the numeracy task, responded to suspicion and attention checks (as in prior studies), guessed the study's hypothesis, and read a debriefing that stated information about other participants' donations was fabricated.

Transparency and Openness

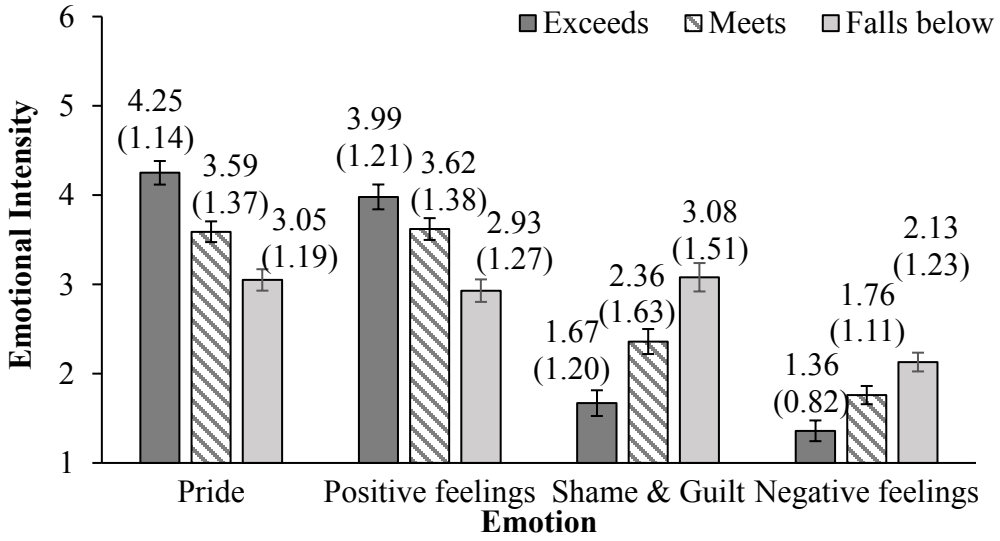
Adhering to JARS (Appelbaum et al., 2018), Study 4 is reported with preregistered materials and *a priori* predictions, power analyses for sample size justifications, and analysis plans. All analyses in the main text were preregistered unless otherwise noted. All data and code (listing required packages) have been uploaded in a repository hosted on OSF. Analyses used R, version 4.2.1 (R Core Team, 2020).

Results

We first compared the intensity of self-conscious emotions across conditions, starting with pride. A linear model predicted pride from expectation discrepancy (*exceed* as reference) controlling for self-esteem; see Table 7. Figure 4 shows mean estimates of emotion intensity across conditions. As predicted, participants felt greater pride when they exceeded expectations than when they met or fell below them. We next tested an identical model but predicted shame and guilt (*fall below* as reference). As predicted, participants felt greater shame and guilt when they fell below expectations compared to when they met or exceeded them. In other words, as in Study 3, experimentally induced expectation-behavior discrepancies caused people to feel more intense self-conscious emotions; this time, however, we created this discrepancy by manipulating expectations. Study 4 also established that the predicted effects generalize to the moral domain (vs. achievement, as in Study 3).

Figure 4

Emotion Intensity Across Expectation Conditions, Controlling for Self-Esteem, Study 4



Note. Error bars represent the standard error. Means appear above their respective bars and standard deviations appear in parentheses below the mean.

Table 7

Intensity of Emotions Across Conditions While Controlling for Self-Esteem, With and Without Additional Covariates, Study 4

Dependent variable emotion (covariate)	Comparison	*b*	*SE*	*t*	*p*	*d*
Pride	Meet	-0.66	0.177	-3.75	< .001	-0.54
	Fall below	-1.20	0.178	-6.71	< .001	-0.94
Pride (amount raised)	Meet	-0.49	0.173	-2.86	.005	-0.42
	Fall below	-0.83	0.185	-4.46	< .001	-0.70
Pride (positive affect)	Meet	-0.39	0.110	-3.55	<.001	-0.52
	Fall below	-0.41	0.116	-3.54	<.001	-0.54
Positive affect (pride)	Meet	0.18	0.118	1.57	0.12	0.23
	Fall below	-0.06	0.125	-0.50	0.62	-0.08
Shame and guilt	Meet	-0.73	0.201	-3.61	< .001	-0.49
	Exceed	-1.41	0.215	-6.56	< .001	-0.95
Shame and guilt (amount raised)	Meet	-0.48	0.198	-2.41	.016	-0.34
	Exceed	-0.96	0.223	-4.29	< .001	-0.68
Shame and guilt (negative affect)	Meet	-0.36	0.143	-2.50	0.01	-0.34
	Exceed	-0.66	0.157	-4.18	< .001	-0.63
Negative affect (shame and guilt)	Meet	-0.00	0.106	-0.01	0.99	-0.00
	Exceed	-0.04	0.118	-0.35	0.73	-0.05

Note. Models with a covariate had 299 *df*; those without had 300.

These patterns are consistent with our theory, but another explanation remains: Participants might be reacting to the absolute amount they raised (i.e., feeling proud of a large donation, or ashamed of small one), not its discrepancy with expectations. After all, greater amounts were raised by participants in the *exceed* condition ($M = 1.44$, $SD = 0.77$) than by those in the *meet* ($M = 1.03$, $SD = 1.01$) or *fall below* ($M = 0.57$, $SD = 0.55$) conditions, ps < .001. This occurred because, as noted above, participants who raised near the maximum amount (> $2.15) could only be randomly assigned to exceed or meet expectations, and those who raised little-to-no funds (< $0.35) could only be randomly assigned to fall below or meet expectations. When removing these individuals, the amount raised does not differ across conditions and our critical analyses return identical results (see the SOM). Still, as an exploratory test to rule out this possibility, we re-ran the above analyses while controlling for amount raised. Results from these

exploratory tests support our theory: pride was greater among people who exceeded expectations than those who met or fell below them, even controlling for the amount they raised (which was positively correlated with pride, $b = 0.44$, $p < .001$); see Table 7. Likewise, shame and guilt were greater among people who fell below expectations than among people who met or exceeded them, even controlling for the amount raised (which was negatively associated with shame/guilt, $b = -0.54$, $p < .001$).

As in prior studies, we next tested whether this relationship was robust to controlling for shared variance with non-self-conscious affect. One exploratory linear model predicted pride from expectation discrepancy (*exceed* as reference), controlling for self-esteem and positive affect; another instead predicted positive affect and controlled for pride; see Table 7. Supporting our theory, even controlling for shared variance with positive affect ($b = 0.75$, $p < .001$), participants felt greater pride when they exceeded expectations than when they met or fell below them. When predicting positive affect while controlling for pride ($b = 0.83$, $p < .001$), these relationships were either highly attenuated or absent: Participants felt the most positive affect when meeting expectations, greater than when both exceeding and falling below them (no difference emerged between these latter two conditions).

Turning to shame and guilt, we conducted two similar linear models but swapped both positive self-conscious emotions and affect for their negative counterparts. Consistent with our theorizing, when controlling for negative affect ($b = 0.97$, $p < .001$), people felt greater shame and guilt when falling below expectations than when meeting or exceeding them; see Table 7. Also consistent with our theorizing, when predicting negative affect and controlling for shame and guilt ($b = 0.52$, $p < .001$), no significant relationships remained between expectations and negative affect. Taken together with Study 3's results, these patterns indicate that expectation

violations cause people to feel self-conscious emotions, over and above other feelings. This finding highlights novel emotional outcomes of moral behavior beyond the warm glow identified in prior work (Andreoni, 1990).

Discussion

Studies 1-4 support our theory, but all were conducted in controlled, online contexts. Study 5 therefore tested whether our theory holds in a real-world context, and leveraged a longitudinal design to test whether discrepancies from expectations reported prior to a performance predicted subsequent self-conscious emotions in response to that performance.

Study 5

Study 5 longitudinally measured runners' performance expectations, whether they subsequently met them, and how they felt in response. It also measured both subjective expectation violations and objective expectation-behavior violations, to test whether expectations track objective reality.

Method

We preregistered predictions, *a priori* power analyses, materials, and analysis plans.

Participants and Procedure

We aimed to recruit runners who record and value their running performance, since they regularly evaluate an identity-relevant performance (running) and can change their performance (i.e., improve or worsen) over relatively short periods. This meant we did not need to study outcomes over a long timeframe to observe an instance where they had violated their expectations. As in Study 3, recruiting a targeted sample here ensured that we could study a self-relevant behavior, which is an important precondition for self-conscious emotions (Tracy & Robins, 2004). We recruited 450 adult runners to participate in a study described as assessing

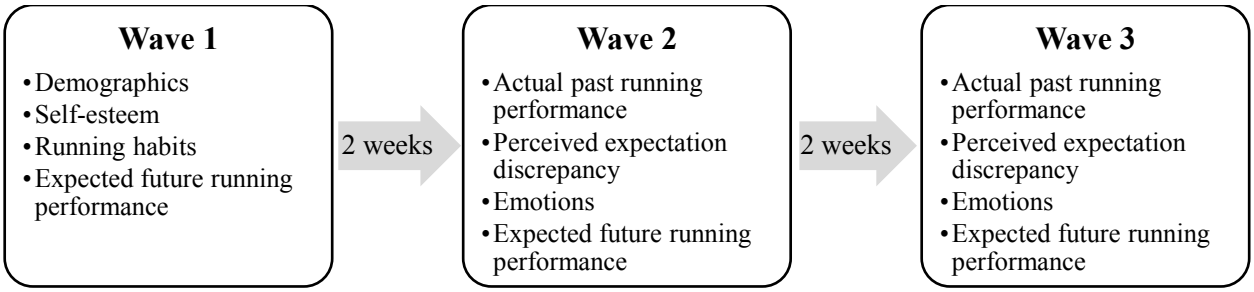
runners' emotions, in exchange for entries into a drawing for a gift card to a running store. We advertised the study on public Facebook groups relevant to running in Canada (since gift cards would be in Canadian currency). Participants could earn additional draw entries by referring other runners to the study.

We administered the study in three waves of online surveys. If a participant completed Wave 1 (Wave 2), two weeks later we invited them to complete Wave 2 (Wave 3). They earned one drawing entry for completing each of the first two waves and three more entries for completing the third. Waves 2 and 3 included our critical emotion measures. Expecting attrition, we recruited to adequately power for Wave 2 analyses only (we preregistered that we would analyze Wave 3 data exploratorily). Of the 450 participants who completed Wave 1, 250 completed Wave 2, and 149 of those completed Wave 3. As preregistered, we excluded responses from three participants who reported providing low-quality data, leaving $N = 247$ at Wave 2 and $N = 146$ at the Wave 3 (both waves: 70% female; age $M = 41$).

Figure 5 summarizes Study 5's procedure. In Wave 1, participants reported their demographics, self-esteem, information about their running habits, and how they expected to perform in the next two weeks. At Waves 2 and 3, they reported their best running performance from the prior two weeks, were reminded of their expectations from the prior survey, then reported how intensely they felt several emotions about their best recent performance and how they expected to perform in the next two weeks.

Figure 5

Summary of Study 5 Procedure



Note. Measures are listed in the order in which they were completed.

Measures

Self-Esteem. Participants reported self-esteem by responding to the statement "I have high self-esteem" (see Robins et al., 2001) using a 7-point scale (*1 = Strongly disagree, 7 = Strongly agree*).

Running Habits. To ensure participants could accurately report their running performance, we asked them to indicate how they typically measured it (e.g., app, smartwatch), and ejected them from the study if they reported not measuring it at all. We focused on four running metrics: total distance, total time, pace, and frequency (e.g., how often one runs per week). Participants reported which of these they could measure and which they cared about most when evaluating their performance. They also reported when they had begun their current running routine (*within the past month, 1-3 months ago, 3-6 months ago, 6 months to 1 year ago, 1-3 years ago, 3-6 years ago,* and *longer than 6 years ago*). We suspected novice runners might find it easier to improve (i.e., exceed expectations) than experienced ones, so we preregistered our plan to test whether this item (and/or self-esteem) predicted pride or shame and guilt at $p < .05$, in which case we would control for it. Only self-esteem predicted these emotions (it predicted both at Wave 2, $ps < .014$, but neither at Wave 3; see SOM), so we controlled for it in Wave 2 analyses.

Expected Running Performance. At each wave, before reporting their expectations for upcoming weeks, participants reviewed their recent performance metrics to help them form realistic expectations. They then reported their expectations for each metric, reading a prompt that began "*I realistically expect to run"* and ended with "*this distance"*, "*this length of time"*, "*at this pace"*, and "*___ time(s) per week."* For each metric, they wrote a number then selected the units (e.g., kilometers vs. miles, minutes vs. hours) and a timeframe (e.g., during a single run vs. total per week) for their answer.

Actual Running Performance. The Wave 2 and 3 surveys began by asking participants to report the metrics of their single best running performance from the past two weeks, using the performance metric they valued most. For example, if a runner valued pace when evaluating their performance, they would identify which single run from the past two weeks featured their best pace, then report that run's pace, total distance, and total time, as well as how many times overall they ran that week. We had runners report their best performance because it would presumably have required greater effort, leading to internal attributions (if runners attributed their performance to external factors, they would likely not feel self-conscious emotions, impeding tests of our hypotheses; Tracy & Robins, 2004; Weiner, 1985). Also, runners might not meaningfully improve in only two weeks, but by focusing on their best performance, they might be more likely to improve and exceed expectations. For these measures, participants responded to prompts that began "*In the past two weeks"* and continued "*my best distance was"*, "*my best time was"*, "*my best pace was"*, and "*the most times I ran per week was"*. For each metric, they reported a number then selected the applicable unit and timeframe. For example, runners at Wave 1 on average expected to run 5.8 hours and 51 kilometers per week and at a 6 minute-per-

kilometer pace; at Wave 2, on average they expected to run 5.3 hours and 45 kilometers per week and at a 6 minute-per-kilometer pace.

Subjective Expectation Discrepancy. Participants saw the expectations they had reported in the prior survey then chose the best response to complete the sentence "My best running performance over the past two weeks has __ my expectations from two weeks ago*"* (*1 = Fell far below, 4 = Met, 7 = Far exceeded)*. With two weeks having passed, participants might have forgotten the expectations they reported earlier, so we reminded them of their prior answers. They were therefore free to consider these initial predictions when evaluating their performance, as well as other factors that they believed shaped their performance (e.g., weather, injuries, etc.).

Emotions. At Waves 2 and 3, they reported the intensity with which they felt various emotions about their best performance using the items and scale from Studies 3-4 (except we omitted *indifferent* for brevity). As preregistered, we created composites from the same items as in Studies 3-4 (Time 2: *pride*: α = .91; *shame and guilt*: α = .89; *positive affect*: α = .71; *negative affect*: α = .80; Time 3: *pride*: α = .93; *shame and guilt*: α = .89; *positive affect*: α = .67; *negative affect*: α = .80).

Change in Self-Concept. At Waves 2 and 3 we included an exploratory item to capture whether participants experienced a change in their self-concept over time. They were asked, "Has your best running performance in the past two weeks changed how you think about yourself (e.g. your abilities, mental or physical stamina, etc.)?" (*1 = Not at all, 7 = Very much*).

Objective Measures of Expected and Actual Performance. Before we could analyze the objective measures of expected and actual performance, we had to transform them into a single value by averaging responses across metrics. To do this, we converted responses within

each metric to the same unit (e.g., all distance responses were converted to miles per run), then standardized them. Next, because higher values have different meanings for pace than other metrics (runners typically want a lower pace and a higher distance, frequency, etc.), we took the inverse of their standardized pace score. Thus, across metrics, positive standardized values reflect better performance relative to other runners. We averaged across metrics to create the final objective value. We focus on these averages here rather than consider each metric separately or examine only the metric participants rated as most important, because the averages better capture overall performance quality, and because people likely evaluate their performance holistically, using several metrics, even if they deem one most important. Nonetheless, similar patterns emerged for the metric participants reported valuing most. We used this procedure to create an objective measure for expectations in each of Waves 1-3 and for actual performance in each of Waves 2 and 3.

Transparency and Openness

Adhering to JARS (Appelbaum et al., 2018), Study 5 is reported with preregistered materials and *a priori* predictions, power analyses for sample size justifications, and analysis plans. All analyses in the main text were preregistered unless otherwise noted. All data and code (listing required packages) have been uploaded in a repository hosted on OSF. Analyses used R, version 4.2.1 (R Core Team, 2020).

Results

Key Tests Using Subjective Expectation Discrepancies

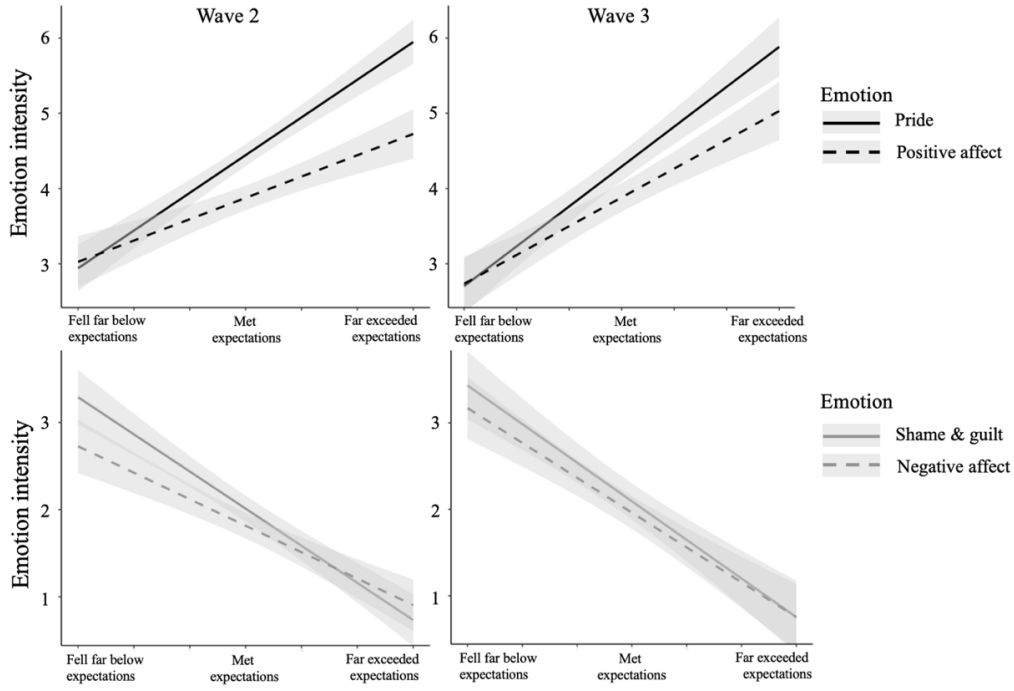
For our first hypothesis, a linear model predicted pride from *subjective expectation discrepancy* (both assessed at Wave 2), controlling for self-esteem. As predicted, participants felt greater pride to the extent that they believed their performance had exceeded expectations (+1

SD: $M = 5.32$, $SE = 0.10$; -1 SD: $b = 2.41$, $SE = 0.10$); see Figure 6. Results replicated at Wave 3: A similar model using Wave 3 data and omitting self-esteem (as it did not predict Wave 3 pride), also revealed that people felt greater pride when they believed their performance exceeded expectations (+1 SD: $b = 5.16$, $SE = 0.14$; -1 SD: $b = 3.27$, $SE = 0.14$).

For our second hypothesis, a linear model predicted shame and guilt from *subjective expectation discrepancy* (assessed at Wave 2), controlling for self-esteem; see Figure 6. As predicted, people felt greater shame and guilt when they believed their performance fell below expectations (+1 SD: $M = 1.27$, $SE = 0.11$; -1 SD: $M = 2.69$, $SE = 0.11$). Results replicated at Wave 3: A similar model using Wave 3 data and omitting self-esteem (as it did not predict Wave 3 shame and guilt) revealed that participants felt greater shame and guilt at Wave 3 when they believed their performance fell below their Wave 2 expectations (+1 SD: $M = 1.36$, $SE = 0.15$; -1 SD: $M = 2.95$, $SE = 0.15$); see Figure 6.

Figure 6

Perceived Expectation Discrepancies Predicting Self-Conscious Emotions, Waves 2 and 3



Note. Shaded areas surrounding line depict 95% confidence intervals.

Table 8

Comparing the Relationship Between Expectations and Self-Conscious vs. Other Emotions, Study 5

Outcome	Wave	Covariates	*b*	*SE*	*t*	*p*	*d*
Pride	2	Self-esteem as covariate	0.50	0.044	11.39	<.001	1.46
		Positive affect and self-esteem as covariate	0.36	0.038	9.48	<.001	1.22
	3	No covariates	0.53	0.055	9.64	<.001	1.62
		Positive affect as covariate	0.27	0.048	5.67	<.001	0.96
Shame and guilt	2	Self-esteem as covariate	-0.42	0.045	-9.54	<.001	-1.22
		Negative affect and self-esteem as covariate	-0.22	0.036	-6.08	<.001	-0.78
	3	No covariates	-0.45	0.059	-7.59	<.001	-1.28
		Negative affect as covariate	-0.14	0.050	-2.79	.006	-0.47

Note. Wave 2 pride (guilt and shame) models controlling for self-esteem had 243 (244) *df*. Those also controlling for affect had 242 (243) *df*. Wave 3 pride (guilt and shame) models controlling for self-esteem had 142 (141) *df*. Those also controlling for affect had 141 (140) *df*.

Expectations predicted pride more robustly than positive affect: Controlling for Wave 2 positive affect ($b = .51$, $p < .001$), participants still felt greater pride at Wave 2 to the extent that they believed they had exceeded their Wave 1 expectations; see Table 8. But when controlling for Wave 2 pride ($b = 0.65$, $p < .001$), Wave 2 positive affect was unrelated to perceiving that Wave 1 expectations were violated, $b = -0.05$, $SE = 0.050$, $t(243) = -1.06$, $p = .291$. This replicated at Wave 3: controlling for Wave 3 positive affect ($b = 0.68$, $p < .001$), participants felt greater Wave 3 pride to the extent that they believed they had exceeded their Wave 2 expectations; see Figure 6. But when controlling for Wave 3 pride ($b = 0.65$, $p < .001$), Wave 3 positive affect was unrelated to perceiving that Wave 1 expectations were violated, $b = 0.04$, $SE = 0.052$, $t(141) = -0.70$, $p = .483$.

Expectations also predicted shame and guilt more robustly than negative affect: Controlling for Wave 2 negative affect ($b = 0.68$, $p < .001$), participants who believed they had fallen below their Wave 1 expectations felt greater shame and guilt at Wave 2; see Table 8. But when controlling for Wave 2 shame and guilt ($b = 0.66$, $p < .001$), negative affect was unrelated to perceiving that Wave 1 expectations were violated, $b = -0.02$, $SE = 0.038$, $t(244) = -0.58$, $p = .563$. This replicated at Wave 3: controlling for negative affect at Wave 3 ($b = 0.77$, $p < .001$), participants still felt greater Wave 3 shame and guilt when they believed their performance fell below their Wave 2 expectations. When controlling for Wave 3 shame and guilt ($b = 0.64$, $p < .001$), people also felt greater Wave 3 negative affect when they believed their performance fell below their Wave 2 expectations, $b = -0.12$, $SE = 0.046$, $t(140) = -2.55$, $p = .012$, but this effect was smaller than that for shame and guilt.

Exploratory Tests Using Objective Expectation Discrepancies

Next, exploratory tests examined whether these patterns replicate using objective discrepancies. Presumably we could address this question by examining difference scores between expected and actual behaviors, but doing so would obfuscate potential differences between the two. For example, if people's emotions track their performance but not their expectations, or vice versa, a difference score would hide these separate but distinctive effects. We therefore used condition-based regression instead (see Humberg et al., 2018), which examines the separate effects of discrepancies and their component parts; in doing so, we test three implications of our theory. First, if two people expect to perform similarly, do they feel more intense self-conscious emotions depending on their actual performance (i.e., c_1 in Table 9)? Second, if two people actually perform similarly, do they feel more intense self-conscious emotions depending on their expectations (i.e., c_2 in Table 9)? Third, are expectation-

performance discrepancies related to how intensely people feel self-conscious emotions (i.e., *abs* < 0 in Table 9)?

First, a model predicted Wave 2 pride from Wave 1 expected performance and Wave 2 actual performance (another model used the same variables from the following wave); see Table 9. Patterns mirrored those for subjective discrepancies and replicated across timepoints: People felt greater pride after performing objectively better than their prior expectations. Also, expectations and performance had significant, unique contributions: Performing better and having lower initial expectations both predicted greater pride. The same patterns emerged when controlling for positive affect, suggesting that expectation discrepancies (subjective or objective) are related to pride distinctively.

Table 9

Objective Discrepancies Predicting Self-Conscious Emotion Intensity (With, Without Covariates), Study 5

Emotion (covariate)	Wave 1–2 Discrepancies			Wave 2–3 Discrepancies		
	c_1	c_2	*abs* < 0	c_1	c_2	*abs* < 0
Pride	0.61^{***}	-0.45^{*}	0.89^{**}	1.15^{***}	-0.53^{*}	1.05^{*}
Pride (positive affect)	0.38^{**}	$-0.26^{\dagger}$	0.53^{*}	1.11^{***}	-0.55^{*}	1.10^{**}
Shame and guilt	-0.66^{***}	0.39^{*}	-0.79^{*}	-0.93^{***}	0.66^{**}	-1.33^{**}
Shame and guilt (negative affect)	-0.35^{***}	0.12	-0.25	-0.88^{***}	0.69^{**}	-1.39^{***}

† p < .10. * p < .05. ** p < .01. *** p < .001. c_1 is the coefficient for actual performance controlling for expected; c_2 is the coefficient for expected performance controlling for actual. Positive values for *abs* < 0 indicate feeling that emotion more when performance is greater than initial expectations.

We then tested the same models with shame and guilt. Again, patterns mirrored those for subjective discrepancies and replicated at both timepoints; see Table 9. Participants felt greater shame and guilt after performing objectively below their prior expectations. In addition, expectations and performance had significant, unique contributions: performing worse and

having higher initial expectations both predicted greater shame and guilt. Controlling for negative affect, the same patterns emerged at Waves 2-3, but did not reach statistical significance at Wave 1-2 (p = .135). Nonetheless, these results together indicate that people feel self-conscious emotions both when they *perceive* that they exceeded or fell below expectations, and when their performance *objectively* exceeded or fell below their prior expectations.

Finally, we conducted additional exploratory analyses, which are reported in the SOM, testing whether self-conscious emotions not only track expectation discrepancies but also predict subsequent changes in self-expectations, and more broadly, the self-concept over time. These analyses showed that, in general, those who responded to their performance with pride tended to report higher expectations for their next performance, whereas those who responded with guilt and shame tended to lower their future expectations. Similar patterns emerged for changes in the self-concept. These findings provide preliminary support for the exploratory hypothesis that self-conscious emotions function to inform future expectations for oneself, as well as changes in self-understanding. However, given the strong degree of overlap between self-conscious emotions and expectation discrepancies, it is difficult to know whether these results suggest an independent role of self-conscious emotions in this process, or whether it is the component of self-conscious emotions that is specifically due to expectation discrepancies that causes these downstream effects. For this reason, along with the fact that these analyses address a question that lies outside the scope of the present research, we report these results in the SOM and urge future scholars to further probe into these issues.

Discussion

Study 5's results support our predictions outside the lab and over time. Furthermore, the new finding that self-conscious emotions were associated with *objective* expectation

discrepancies suggests these emotions are functional, tracking and facilitating beneficial responses to real-world events.

Study 6

Study 6 pitted our theory against several relevant prior theories—the identity-goal (in)congruence account, the social valuation account, and the internal attribution account—to determine which better predicts the elicitation of self-conscious (and not other) emotions. It also included a wider range of items to assess non-self-conscious affect.

Method

We preregistered materials, *a priori* predictions, power analyses, and analysis plans.

Participants and Procedure

We recruited American participants from Prolific Academic. As preregistered, we excluded anyone who failed an English comprehension check, an attention check, or who self-reported having provided low-quality data.

Participants reported demographics then read a series of four vignettes presented in randomized order; see Appendix B. Each vignette was designed to test whether our theory or a competing account better predicted self-conscious emotions. The first two vignettes compared our account to prior theories based on identity-goal (in)congruence, which emphasize the role of (identity-relevant, self-caused) success and failure without accounting for expectations (e.g., Lewis, 2008; Tracy & Robins, 2004); we therefore held success and failure constant, manipulating whether it was expected or not. Specifically, the first vignette depicted a success scenario, and we manipulated whether this success exceeded or met expectations. The second depicted a failure, and we manipulated whether it fell below or met expectations. According to identity-goal focused theories, as well as our own, identity-goal congruence and incongruence

crucially determines whether pride and guilt/shame are elicited, respectively; as long as an event is relevant to these goals and congruent or incongruent with them, and internally attributed, self-conscious emotions are expected to occur—regardless of whether goal (in)congruence was expected. To test this theory against our own, it was necessary to include two scenarios: one comparing the effects of an expected vs. unexpected identity-goal congruent and relevant internally attributed event (i.e., success in eliciting pride), and another comparing the effects of an expected vs. unexpected identity-goal *in*congruent and relevant internally attributed event (i.e., failure in eliciting guilt/shame).

A third vignette was included to test our account against the social valuation account (Sznycer, 2019), which emphasizes the importance of others' valuation of a particular behavior without accounting for the role of one's own valuation or expectations. Due to socialization, people's personal values typically align with what their social group values; cases where the two diverge provide the best test between these theories. This vignette therefore described a person who exceeded expectations, and it manipulated whether they did so in a domain that they valued and others did not, or a domain that others valued and they did not. In the social valuation condition, participants were informed that "people in your community pay good money for [designer birdhouses]." Although a behavior can be socially valued in non-financial ways, assigning a monetary value to this achievement was intended to operate as an explicit, unambiguous signal of social valuation.

A fourth vignette examined the role of internal attributions. Prior theories have suggested self-relevance and expectation violations each elicit stronger emotions (e.g., Olson et al., 1996; Phillips & Silvia, 2005); a theory that combined these ideas would predict, like ours, that self-relevant expectation violations would elicit stronger self-conscious emotions. However, such a

theory would fail to account for internal attributions, which our theory and others prior suggest are crucial (e.g., Weiner, 1985). Internal attributions were not manipulated in Studies 1-5, so we manipulated this dimension here to test the validity of this account. The fourth vignette thus described a person who exceeded expectations and manipulated whether external factors facilitated or inhibited their performance, thus suggesting external or internal attributions for the performance, respectively.

To test the latter two accounts, social valuation account and the internal attribution account, only one vignette was necessary (involving exceeding expectations eliciting pride) to test each theory against ours. These theories, unlike the appraisal-based ones, treat pride as simply the opposite of shame and guilt, so including scenarios for both positive and negative self-conscious emotions would be theoretically redundant and require additional time of our participants.

Across scenarios, achievements and failures were designed to have high identity-goal relevance. A possible exception is Vignette 3, in which the manipulation of personal vs. social valuation might also have manipulated (i.e., varied in) identity-goal relevance, if a personally valued goal is considered more relevant to one's identity than a socially but not personally valued goal. According to our theory, along with all other theories of self-conscious emotions (with the possible exception of the social valuation account), high identity-goal relevance is a necessary eliciting appraisal. Applying this generality to our specific account, we would not predict expectation violations to elicit self-conscious emotions in behavioral domains that are not relevant to one's goals for their identity.

Measures

After each vignette, participants rated the extent to which they expected to feel a series of emotions in response to this situation, then (on a separate page) reported their appraisals of this situation. Appraisals were measured as a manipulation check, but also used in additional exploratory tests of our hypotheses.

Emotions. Participants responded to the question, "How would you feel in this situation?" for each of 30 emotion items (*1 = Not at all*, *7 = Very much so*). As preregistered, we planned to scale these items into several composite variables: *pride* (*M* of "proud", "confident", "accomplished", and "good about myself."; α = .96), *shame and guilt* (*M* of "ashamed", "guilty", "disappointed in myself"; α = .88), *positive affect* (*M* of "interested", "alert", "excited", "inspired", "strong", "determined", "attentive", "enthusiastic", "active", "content", and "relieved"; α = .95), and *negative affect* (*M* of "Jittery", "Irritable", "Distressed", "Upset", "Nervous", "Scared", "Hostile", "Afraid", "Angry", and "Sad"; α = .92). This approach contrasts that used in Studies 1-5, which included 2-item composites for positive and negative affect. Here, composites included all non-self-conscious emotion items from the PANAS (Watson et al., 1988), to ensure that effects observed in the prior studies were not due to our use of a narrow range of emotion terms. The SOM reports descriptive statistics (*M, SD*) for each emotion item within each condition, as well as re-analyses of key tests treating each item separately (nearly identical results emerged when we did so).

Appraisal Dimensions. To ensure that participants interpreted vignettes as manipulating the intended appraisal dimension, we included five appraisal items. For identity-goal congruence (not manipulated; relevant to all vignettes), participants responded to the prompt, "In this situation, did you succeed or fail at accomplishing a goal?" (1=failed, 2=neither succeeded nor failed, 3=succeeded). For expectation discrepancy (manipulated in Vignettes 1 and 2; relevant to

all vignettes), they responded to the prompt, “In this situation, my behavior...” (1=Fell far below expectations, 4=Met expectations, 7=Far exceeded expectations). For social valuation (manipulated in Vignette 3; most relevant to Vignette 3), they responded to “How would other people in your social group (for example, your friends or family) evaluate your behavior in this situation?” (1=They would view it very negatively, 7=They would view it very positively). For identity-goal relevance (manipulated in Vignette 3; relevant to all vignettes) and internal attributions (manipulated in Vignette 4; relevant to all vignettes), they rated the extent to which the situation was “relevant to your identity, or who you are” and “due to you or something about you” (1=Not at all, 7=Very much so).

Transparency and Openness

Adhering to JARS (Appelbaum et al., 2018), Study 6 is reported with preregistered materials and *a priori* predictions, power analyses for sample size justifications, and analysis plans. All analyses in the main text were preregistered unless otherwise noted. All data and code (listing required packages) have been uploaded in a repository hosted on OSF. Analyses used R, version 4.2.1 (R Core Team, 2020).

Results

We first tested whether each scenario’s two conditions differed on the manipulated appraisal dimension. Four linear models—one per vignette—predicted the relevant appraisal dimension from condition (across models, the condition consistent with our theorizing was coded as 1). In all cases, manipulations worked as intended. In Vignette 1, participants believed that they succeeded to similar degrees in both conditions, $b = 0.01$, $SE = 0.03$, $t(289) = 0.32$, $p = .748$, but that they exceeded expectations more in the *exceed* condition than in the *meet* condition, $b = 1.16$, $SE = 0.12$, $t(288) = 9.77$, $p<.001$; conversely, in Vignette 2, participants believed that they

failed to similar degrees in both conditions, b = -0.08, SE = 0.04, t(289) = -1.71, p = .088 (if anything, the trend was to perceive greater failure in the unexpected condition); but that they fell below expectations to a greater extent in the *fall below* condition than in the *meet* condition, b = -0.61, SE = 0.14, t(289) = -4.41, p <.001.

In Vignette 3, participants believed that the scenario was more relevant to their identity, b = 0.99, SE = 0.19, t(288) = 5.12, p<.001, and less socially valued, b = -0.29, SE = 0.14, t(289) = -2.12, p = .035, in the personally but not socially valued condition, compared to the socially but not personally valued condition. In Vignette 4, participants perceived greater internal causation in the internal attribution condition, b = 1.56, SE = 0.20, t(289) = 7.73, p < .001.

Next, for our preregistered hypotheses, we tested whether participants felt greater self-conscious emotions in the predicted conditions compared to the alternatives, and whether these emotions were experienced over and above non-self-conscious emotions. For Vignettes 1, 3 and 4, we conducted linear models predicting pride from condition, and including positive affect as a covariate. Vignette 2 instead predicted shame and guilt from condition with negative affect as a covariate.

In all cases, results supported our predictions (see Table 10). In Vignette 1, controlling for positive affect, participants reported greater pride in the *exceed* condition (M = 6.20, SE = 0.06) compared to the *meet* condition (M = 5.87, SE = 0.06). In Vignette 2, controlling for negative affect, participants felt greater shame and guilt when they fell below expectations (M = 3.97, SE = 0.08) compared to when they met them (M = 3.72, SE = 0.08). In Vignette 3, controlling for positive affect, participants felt greater pride when they performed a behavior that they personally valued (M = 5.46, SE = 0.06) compared to one that others valued (M = 5.27, SE = 0.07). In Vignette 4, controlling for positive affect, participants felt greater pride when they

attributed their performance to internal factors ($M = 5.60$, $SE = 0.07$) compared to external factors ($M = 4.91$, $SE = 0.07$).

Table 10

Intensity of Emotions Across Conditions, With Covariates, Study 6

Vignette #: Description	Emotion	*b*	*SE*	*t*	*p*
1: Exceed vs. meet expectations (success)	Pride	0.33	0.08	4.12	<.001
2: Fall below vs. meet expectations (failure)	Shame and guilt	0.24	0.11	2.18	.030
3: Exceed expectations in a personally vs. socially valued domain	Pride	0.18	0.09	1.99	.048
4: Exceed expectations due to internal vs. external causes	Pride	0.69	0.11	6.18	<.001

Note. Models predicting pride (guilt and shame) included positive affect (negative affect) as a covariate. All models had 288 *df*.

We next conducted exploratory analyses examining the extent to which self-perceived appraisals predicted self-conscious emotions. We collapsed all data across the four vignettes and tested two multilevel models, one predicting pride and the other predicting shame and guilt, from attributions of identity-goal relevance, internal attributions, identity-goal congruence, and expectation incongruence (while accounting for nesting within participant). Results demonstrated that three appraisal dimensions—identity-goal congruence, expectation incongruence, and, to a lesser extent, internal attributions—predicted more intense self-conscious emotions (see Table 11). In addition, identity-goal relevance marginally predicted the intensity of shame and guilt, and was not significantly related to pride. These exploratory analyses thus suggest that, for the most part, the extent to which participants appraised the events as identity-goal (in)congruent, due to internal causes, and violating expectations was associated with the extent to which they expected a self-conscious emotional response. Importantly, the relation between self-conscious emotions and expectation discrepancies held controlling for the other appraisal dimensions that have been highlighted in prior work. This finding indicates that perceived expectation

discrepancies contribute to self-conscious emotional experiences independent of other relevant appraisals.

Table 11

Intensity of Emotions Across Conditions, Study 6

Emotion	Predictor	*b*	*SE*	*t*	*df*	*p*
Pride	Identity-goal relevance	0.02	0.03	0.94	1149	.348
	Internal attribution	0.08	0.02	3.03		.002
	Identity-goal congruence	0.80	0.06	12.36		<.001
	Expectation congruence	0.49	0.03	16.21		<.001
Shame and guilt	Identity-goal relevance	0.04	0.02	1.88	1148	.061
	Internal attribution	0.06	0.02	2.55		.011
	Identity-goal congruence	-0.79	0.06	-13.56		<.001
	Expectation congruence	-0.30	0.03	-10.95		<.001

Nonetheless, it is somewhat surprising that appraisals of identity-goal relevance were only weakly related to self-conscious emotions. This unexpected result might be due to shared variance between perceived identity-goal relevance and internal attributions, which were strongly positively correlated, $r = 0.55$. We therefore re-ran the models including only one of internal attributions and identity-goal relevance as a predictor, along with identity-goal and expectation congruence. Once again, identity-goal congruence and expectation congruence were strong significant predictors of self-conscious emotions (ps < .001), but both identity-goal relevance (pride: $b = 0.09$, $SE = 0.02$, $t(1152) = 4.17$, $p < .001$; shame and guilt: $b = 0.08$, $SE = 0.02$, $t(1151) = 4.22$, $p < .001$), and internal attributions (pride: $b = 0.06$, $SE = 0.02$, $t(1153) = 2.98$, $p = .003$; shame and guilt: $b = 0.08$, $SE = 0.02$, $t(1152) = 3.89$, $p < .001$) were as well. These results confirm the importance of both identity-goal relevance and internal attributions to self-conscious emotions, and point to the need to measure these appraisals in more distinctive ways in future work.

General Discussion

Six methodologically diverse studies provide consistent support for our novel theory of the elicitors of self-conscious emotions. Out of 52 tests of our primary preregistered hypotheses, 50 (96%) provided statistically significant support; we discuss both exceptions in the Table of Limitations. Moreover, our analytic techniques and study designs allowed us to isolate the effect of perceived expectation discrepancies on self-conscious emotions by holding constant related variables like objective performance, non-self-conscious emotions, and self-esteem. Together, these findings indicate the predictive utility of our theory over and above prior ones.

Implications for Self-Conscious Emotions Theories

Prior accounts suggest that self-caused, identity-goal-relevant success and failure elicit self-conscious emotions. Although these dimensions are undoubtedly important, these theories overlook expectations. We argue that another appraisal—(*in)congruence with self-expectations*—delineates when people feel self-conscious vs. non-self-conscious emotions. In this view, people must attend to themselves and interpret their behavior as identity-goal-relevant, identity-goal-(in)congruent, self-caused, and *unexpected* (i.e., incongruent with, or violating, expectations) to maximize the experience of self-conscious emotions, whether positive or negative. The results of Study 6 reveal the unique variance in self-conscious emotion experience that is accounted for by expectation discrepancies, and they do so through both experimental manipulation and multiple regression analyses comparing the predictive power of self-reported levels of each appraisal dimension. Although pride can be elicited by behaviors that are identity-goal relevant and congruent and attributed to internal causes, it is more strongly elicited by behaviors that meet these requisites *and* surpass the individual's expectations for their behavior.

The present findings also suggests that self-conscious emotions serve a more specific function than previously assumed. Functionalist theories suggest that emotions compel behaviors

that solve adaptive challenges (Beall & Tracy, 2017; Tooby & Cosmides, 2000), with pride motivating status maintenance or attainment, and shame and guilt motivating efforts to avoid losing status or to cope effectively with status loss (Beall & Tracy, 2020; Fessler, 2007; Martens et al., 2012). However, we observed that pride follows *not* simply from meeting expectations—that is, behaving in ways that presumably would maintain one's status—but from positive expectation discrepancies (e.g., improvement; favorable social comparisons), which presumably increase status. Thus, pride's pleasant feelings may reward and reinforce status-*gaining* behaviors—climbing the social ladder, rather than merely maintaining one's current place on it—and lead people to change their standards, raising the rung as they expect more of themselves (despite potentially making it harder to exceed expectations and feel proud in the future). Conversely, our account also suggests that the unpleasantness of shame and guilt has a specific function: to punish and demotivate devalued behaviors that will lower one's status beyond its current position (i.e., failing in ways worse than typical, worse than others fail, or worse than obliged), rather than to punish failure or socially devalued behaviors *per se* (Sznycer, 2019).

In fact, Study 6 shows that surpassing one's expectations for *personally* valued, rather than socially valued, behaviors are most strongly predictive of pride. This result indicates that it is identity-relevant goals, specifically, rather than socially valued goals, that are crucial to self-conscious emotion elicitation. Of course, through socialization, individuals internalize socially valued goals such that they become part of one's own identity; it is therefore reasonable to assume that pride evolved to serve a social-valuation function at the distal, ultimately evolutionary level (Tracy & Robins, 2004b). However, in contrast to social adaptationist accounts which posit that self-conscious emotions are not about the self (Landers et al., 2024), we argue that developing a sense of self based largely on social norms and ideals allows people

to build an identity that encompasses what it means to be a social being. Possessing such an identity allows individuals to form goals and evaluate their behaviors in comparison to their (relatively) stable sense of self, rather than to constantly consider varying local norms. By experiencing self-conscious emotions in response to events that are relevant to identity goals, and responding to them in an adaptive manner, individuals can ensure that they maintain or enhance an identity that meets their culture's broader social goals.

From this perspective, one future research direction that would bridge our account with the social adaptationist one is to examine how social (de)valuation of a success or failure may be contingent on others' expectations (as well as one's own). It is possible that if observers view a person's behavior as violating expectations in an identity-goal-congruent manner, they would also view it as more socially valued than if it simply met expectations. In turn, these observers might feel vicarious pride in response to a close other's behavior as a result of increases in social value following expectation violations. Future studies are needed to examine the interplay between social valuation and expectation discrepancies in shaping self-conscious emotion experiences.

Implications for Theories of Expectations

Prior theorists have suggested that expectations influence emotions but not self-conscious ones specifically (Wicklund, 1975; Lewin, 1951; Morina, 2021; Theriault et al., 2020), perhaps in part because expectations are usually conceptualized as predictions about the future (e.g., Theriault et al., 2020), whereas self-evaluation involves predictions formed in hindsight. People compare their behavior with a counterfactual based on how they would expect themselves to have behaved (given their identity, the situation, etc.; Olson et al., 1996; Quillien & Lucas, 2023). Retrospective expectations integrate details unavailable to *a priori* predictions (e.g., how

difficult the task felt; how the situation shaped their performance), helping people to diagnose their role in an event.

We suggest that self-conscious emotions respond more to expectations formed in hindsight, but they still relate to *a priori* expectations. For example, we reminded participants of their predictions in Studies 3 and 5, and discrepancies from these predictions elicited self-conscious emotions. These reminders may have allowed people to evaluate their behavior using their predictions as well as other information gleaned from the actual event (e.g., how difficult the exam felt; injuries affecting runs). Study 5 also provided preliminary evidence to suggest that self-conscious emotions influence the new expectations people set for themselves, and more broadly, how people view and understand themselves (see SOM). These findings are consistent with prior theorizing suggesting that when expectations are violated, people update them accordingly (Zafar, 2011). However, prior theories emphasized the cognitive aspects of this process (Clark, 2013), or highlighted feelings of generalized affect or surprise (Maguire et al., 2011; Theirault et al., 2021). Here, we show that self-conscious emotions may play an important role, specifically because they may track expectation discrepancies. Identifying the precise role of emotions in this process is a task we leave to future research; Table 12 discusses other areas for future research as well as limitations and generalizabilty of the present work.

Table 12

Table of Limitations

Dimension	Sub-dimension	Assessment
Internal validity	Is the phenomenon tested with experimental methods?	Studies 3 and 4 used experimental methods. In Study 4, we were not able to randomly assign all participants to the three experimental conditions. To ensure the manipulation's believability, participants who raised above $2.10 could not be assigned to the fall-below condition, and participants who raised below $0.40 could not be assigned to the exceed condition. In supplementary analyses reported in the SOM, we excluded these participants from the sample, and still found support for our predictions. In Study 4, it is possible that some participants in the above-average condition viewed their performance as meeting their personal expectations to do better than others (rather than as exceeding their expectations). However, we used a boring numerical task to reduce the likelihood of eliciting pride or evoking self-enhancement motivations. Participants are therefore likely to have calibrated their expectations for their performance based on similar others rather than assuming themselves to perform 'better than average'. However, if some participants did make this assumption, their expectations would have worked against, rather than for, our hypothesis. The findings in support of our predictions despite this issue thus provide strong support for our theory.
	Is the phenomenon tested with longitudinal methods?	Study 5 used longitudinal methods.
	Were the manipulations validated with manipulation checks, pretest data, or outcome data?	Studies 3, 4, and 6 included manipulation checks.
	What possible artifacts were ruled out?	Studies 3 and 4 statistically controlled for artifacts related to absolute performance (e.g., actual test score, amount donated). Study 1's within-subject design allows for the possibility of demand effects to influence results. Given that participants could see each expectation condition, they might have guessed the difference between conditions and reported emotions accordingly. To address this limitation, Studies 2-4 and 6 used between-subject designs (precluding explicit comparisons), Studies 3 and 4 removed participants who guessed our hypotheses when probed, and Study 5 had participants provide all key variables firsthand (i.e., they reported their actual and expected performances, rated how they compared to their expectations from the prior survey wave, then reported their

		emotions); thus, experimenter-provided information could not have driven results.
Statistical validity	What is the statistical power (at least 80%)?	All confirmatory tests achieved at least 80% statistical power.
	What is the reliability of the dependent measure established in this publication or elsewhere in the literature?	Dependent measures were standard, face-valid self-report measures of emotions. For scales constructed, αs $\leq$ .71 (except for positive affect in Study 4, for which α = .61, and the same scale in Study 5, Wave 3, for which α = .67). All key results held when considering individual items as separate DVs (see SOM).
	If covariates are used, have researchers ensured they are not affected by the experimental manipulation before including them in comparisons across experimental groups?	The covariates that were expected to be unrelated to the manipulation (self-esteem) were, in fact, unrelated to the manipulation.
	Were the distributional properties of the variables examined and did the variables have sufficient variability to verify effects?	We report the distributional properties of our variables; based on results there was sufficient variability to test our predictions.
Generalizability to different methods, field settings, and times and populations	Were different experimental manipulations used?	Yes, Studies 1, 3, 4, and 6 used different manipulations to induce expectation-behavior discrepancies.
	Was the phenomenon assessed in a field setting?	Yes, Study 5 was a naturalistic observation study
	Are the methods artificial?	Some studies used artificial situations or tasks that might not generalize to real-life. For example, Study 3 had students take a quiz that, while relevant to their self-concept, was a low-stakes practice test which they did not prepare for, so they might not evaluate themselves harshly for earning subpar scores on. Indeed, this limitation might explain why some of the exploratory effects on guilt and shame were not robust to covariates. Study 5 represents the least artificial test of our theory. It examined real, self-relevant behavior and emotional reports from a relevant population. In addition, despite the use of methods that had some degree of artificiality, we examined multiple behavioral domains across studies (e.g., morality; athletic and academic achievement), and recruited targeted samples (e.g., psychology students; runners) or had participants recall behaviors they deemed self-relevant (Study 2); these practices increase the likelihood that results will apply to important real-world situations. Finally, because we aimed to study expectation-behavior discrepancies and to show their causal effect, we had to explicitly measure both expectations and behavior or provide

		this information ourselves. And yet, in real, naturalistic contexts, people's self-evaluations likely depend on whatever source(s) of expectations spontaneously come(s) to mind. For example, if we had not supplied social comparison information in Study 4, participants might guess how much others would raise, or they might think about how much they are obliged to raise, or how much they would raise based on prior behavior (e.g., how generous they typically are). To study this process as it unfolds, future work might have people recall and write about peak self-conscious emotional experiences, and code the extent to which their narratives invoke comparisons with oneself over time (e.g., improvement or decline), with others (e.g., competition), or with obligations (e.g., consistency with values, relationships).
	Are the results generalizable to different years in historic periods?	Our data cannot speak directly to this issue, but self-conscious emotions and expectations are general psychological phenomena and likely generalize across time.
	Are the results generalizable across populations (e.g., different ages, cultures, or nationalities)?	Our studies sampled a variety of groups: American survey workers, university participants, and runners in online communities. On one hand, sample variety increases confidence in generalizability across populations, especially given that we found consistent support across samples. On the other hand, these samples are not fully representative of any particular larger group that we would wish to generalize to (e.g., Westerners; humankind), which is a limitation. In particular, our theory suggests a general tendency for people to feel self-conscious emotions in response to self-expectation violations, yet our evidence comes from samples of American and Canadian adults, who may feel self-conscious emotions in different situations than people elsewhere (Kitayama et al., 1995; Wong & Tsai, 2007; but see Shi et al., 2015). Nonetheless, building on insights from cultural psychology, our account might help explain known cultural differences in the prevalence and intensity of self-conscious emotions (Mesquita et al., 2016). For example, people from Eastern, collectivistic cultures report feeling shame more often, and pride less often, compared to people from Western, individualistic cultures (Goetz & Keltner, 2007; Kitayama et al., 1995; Leung & Cohen, 2011). Expectations might explain why: People from collectivistic cultures more often derive their sense of identity from social relationships and roles, which carry obligations (Buchtel et al., 2018; Leung & Cohen, 2011). Obligations often preclude opportunities to exceed expectations, so people from these cultures may have more opportunities to feel shame or guilt and fewer opportunities to feel pride, relative to Westerners. In addition, people from collectivistic cultures more often value conformity and devalue efforts to positively distinguish the self from others (Markus & Kitayama, 1991), so they might forgo opportunities to exceed expectations by outperforming peers. Future research is needed to test these possibilities.

Theoretical limitations	What are the main theoretical limitations?	1.) Results supported our preregistered predictions in 50 of 52 cases but the two exceptions were in Study 3, where covariates weakened to non-significance the difference between shame and guilt in the falling-below and meeting expectations conditions. This may have occurred because participants were taking a low-stakes practice test that they had not prepared for, and therefore might perceive a below-average performance as less reflective of what they could do with effortful studying. In fact, participants might have judged a score only 10% below their average, despite their having not studied, as unexpectedly good (though we tried to prevent this possibility by explicitly telling them to expect scoring as well as in prior courses). Study 5's exploratory tests of the role of objective expectation discrepancies in predicting self-conscious emotions also produced one non-significant result for shame and guilt (at Waves 1-2). As with an impromptu test, it might be easier for people to excuse a sub-par running performance as a fluke or as owing to injury, which could buffer more intense feelings of shame and guilt. In contrast, participants in Study 4 had no good excuse for opting against raising money for charity, so the study design did not allow for buffering from shame and guilt. If these buffering features make shame and guilt dissociate less clearly from negative affect, that would explain our non-significant effects, and suggest that future studies on this topic ensure internal attributions for negative performance. More broadly, these results highlight the importance of motivational forces in people's self-evaluations. People are less likely to believe negative, unexpected information about themselves because doing so goes against two fundamental motives: To maintain existing self-views and to believe positive things about oneself (Aronson, 1969; Olson et al., 1996); for these reasons, and to avoid the negative feelings of shame and guilt, people may have attributed bad performances to contextual factors, which could explain why we observed less robust patterns for these emotions. Conversely, our results for pride might have been especially robust because people want to see themselves positively, so they may be especially motivated to believe that they have exceeded expectations and have more positive qualities than they previously thought, even if this defies their motivation to maintain their existing self-views (Olson et al., 1996). 2.) In Studies 1-5, we operationalized positive affect as feeling *content* and *relieved*, and negative affect as *sad* and *angry*. These emotions tend to emerge in situations relevant to goals and expectations, and have the same valence as the self-conscious emotions we compared them with. However, they are but a few of the many we could have assessed. Study 6 helped address this issue by assessing a wide range of non-self-conscious emotions using prominent measures of positive and negative affect. That results hold using this broader array of items ameliorates concerns about this limitation in the prior

		studies, at least to some extent. Still, future work should seek to replicate these effects using firsthand emotion reports and the full PANAS throughout. 3.) We measured shame and guilt in combination, rather than separately. All reported effects emerged for shame and guilt separately (see SOM), but these emotions differ conceptually, functionally, and in their appraisal profiles (Keltner, 1996; Tangney et al., 1996; Tracy & Robins, 2006). According to some accounts, we might see these two emotions dissociate if we measured participants' attributions of their behavior to (un)stable or (un)controllable causes (Tracy & Robins, 2004; 2006). Further research is needed to investigate whether and how expectations might influence shame and guilt differently. 4.) The introduction noted three sources of expectations—prior behavior, others' behavior, and obligations—two of which we tested here: Studies 3 and 5 evoked expectations based on prior performance, and Study 4 evoked expectations based on social comparison. We did not evoke expectations based on obligations but, anecdotally, some participants in Study 2 recalled past situations relevant to obligations. We can therefore conclude that our theorizing applies at least to two of those three sources. However, we also posit that it is difficult to exceed one's obligations (i.e., expectations based on what others want), and our framework makes similar predictions as existing appraisal theories regarding emotional responses to falling below expectations (e.g., more shame and guilt). Future studies testing whether discrepancies from expectations based on obligations elicit pride might use null equivalence testing to examine whether successfully fulfilling obligations elicits pride and positive feelings to similar degrees. 5.) Our theorizing relies in part on claims that prior work supports, but which were not tested here. For example, like Tracy and Robins (2004), we assume others' expectations must be internalized to shape self-conscious emotions, and that additional appraisals differentiate shame from guilt and authentic from hubristic pride. We also suggest that self-conscious emotions respond more to expectations formed in hindsight than *a priori*, but do not test this. Future work would do well to confirm these assumptions. 6.) In Study 6, to test our account against the social valuation account (Sznycer, 2019) while using minimal resources and participant time, we examined only the elicitation of pride following socially valued vs. personally but not socially valued achievements; we did not compare shame and guilt responses to socially devalued vs. personally devalued (i.e., identity-goal incongruent) events. To fully compare these competing accounts, future studies are needed to test whether shame is more strongly elicited by socially devalued vs. personally but not socially devalued failures.

		Future research is also needed to investigate perceived discrepancies from expectations based on one's personal standards vs. socially normative standards. Do personal vs. social expectation discrepancies influence self-conscious emotions differently? It is also important to examine whether people might be motivated to perceive a socially normative standard in a biased manner, in order to reduce shame or increase pride.

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Appendices

Appendix A

Vignettes from Study 1, presented by scenario type.

Achievement Scenarios

1) Josh feels like he is a good student and typically gets good grades – his average is around 85%. Recently Josh took an exam that he studied hard for. Today he found out how he did.
   Imagine how Josh would feel in response to each of the following outcomes:
   a) He learned that he got a 100%
   b) He learned that he got a 85%
   c) He learned that he got a 70%

2) Tonia aspires to be a great painter but she feels like she's really only ok at this point in her life. One weekend Tonia goes to work at her easel and creates a painting. The next morning when the painting has dried, she takes a look at it.
   Imagine how Tania would feel in response to each of the following outcomes:
   a) She feels like the painting turned out really well, and much better than other ones she has made previously.
   b) She feels like the painting turned out decent, and about the same as other ones she has made previously.
   c) She feels like the painting turned out poorly, and worse than other ones she has made previously.

3) Linda places a lot of her self-worth in being a good mother to her children. Linda believes that mothers are responsible for making lunch for their children before going to school.
   Imagine how Linda would feel in response to each of the following events:
   a) One day she puts extra effort into making a special lunch for her kids, and in the evening she overhears them talking about how great their lunch was today.
   b) One day she makes a normal lunch for her kids, and in the evening she overhears them talking about how their lunch was fine today.
   c) One day she puts a bit less attention into her kids' lunch than usual, and in the evening she overhears them talking about how they didn't like their lunch much today.

Care Scenarios

4) Tyrah thinks of herself as a generous person and usually gives as much to charity as she can. While shopping at the mall during the holidays, Tyrah walks by a volunteer who is collecting money for a local charity. Tyrah has $10 dollars in her pocket.
   Imagine how she would feel in response to each of the following:
   a) She goes to a nearby ATM, withdraws $10 more, and gives $20 to the charity.
   b) She gives all $10 to the charity.
   c) She decides to only give $5 and spends the rest on a soft pretzel at a nearby kiosk.

5) Morton considers himself to be a good person and thinks it's important to help those in need. Morton's neighbor, Lilly, is an elderly woman living on her own and she doesn't have much money. Lilly asks Morton to pick up some milk for her breakfast tomorrow and gives him money for it.
   Imagine how Morton would feel in response to each of the following outcomes:

a) Morton pays for the milk with his own money and gives Lilly her milk and money back.
b) Morton uses Lily's money to buy her the milk.
c) Morton forgets to buy Lilly her milk for several days, but gets around to it eventually.

6) Greg values helping others and considers himself to be a thoughtful and considerate person. One evening Greg comes home from work and gets ready to go to the gym. On the way to his car, he smells smoke.
Imagine how Greg would feel in response to each of the following:
a) Greg investigates the smell and finds that his neighbor's house is on fire. He then calls the fire department then runs back over to the house to see if he can do anything to help out instead of going to the gym.
b) Greg investigates the smell and finds that his neighbor's house is on fire. He calls the fire department, then leaves for the gym.
c) Greg assumes there must be a barbeque going on nearby so he disregards the smell and goes to the gym. When he returns, he sees the fire department is putting out a fire at his neighbor's house.

Fairness Scenarios

7) Bob believes that people should get what they earn in life. A while ago Bob hired Sam to work 10 hours a week doing landscaping service for Bob. One week, Bob's yard was in particularly poor condition and should have taken longer than usual. However, Sam was especially hard-working and diligent this week and completed the whole week's worth of service in 7 hours. Sam tells Bob that he only did 7 hours of work this week.
a) Bob tells Sam that given the condition of the yard, he completed a job that's worth more than 10 hours of pay, so Bob pays Sam a bit more than his usual amount.
b) Bob tells Sam that he completed a job that's worth 10 hours of pay, so Bob pays Sam as much as usual.
c) Bob thanks Sam for his honesty and pays him for 7 hours of work.

8) Antonio considers it important to live by the golden rule, 'treat others how you want to be treated'. A few months ago, Antonio's neighbor Jim drove Antonio to work for a few days while Antonio's car was being repaired. Jim's car broke and has undergone repairs for the last week.
Imagine how Antonio would feel in response to each of the following:
a) Antonio drives Jim anywhere he needs to go for entire last week, even though it often is out of Antonio's way.
b) Antonio drives Jim to work for a few days, which was exactly what Jim had done for him when he was in the same situation.
c) Antonio does not drive Jim to work because it is out of his way.

9) Janet believes fairness is an important value, and that hard work should be rewarded. One evening she goes to dinner with several friends and the server does a good job, despite how many people were at the table. Janet decides to leave a generous $10 tip on her portion, which is a 25% tip. However, when her group gets up to leave, Janet notices that one of her friends didn't leave any tip for the server.
a) Janet waits for her friends to leave, then quietly places an extra $10 on the table to make up for her friend not leaving a tip.
b) Janet waits for her friends to leave, then puts a couple more dollars on the table to make up for her friend not leaving a tip.
c) Janet leaves with her friends.

Loyalty Scenarios

10) Chuck is very patriotic and loves America. One evening Chuck is getting dinner with his friend from Britain. At one point, Chuck's friend says that America is on the decline, and much worse than it used to be.
    Imagine how Chuck would feel in response to each of the following outcomes:
    a) Chuck replies by defending America and mentions recent American accomplishments.
    b) Chuck ignores the comment and changes the subject.
    c) Chuck agrees with his friend to be polite.

11) Family is very important to Sara, and part of what this means is that she puts her family above her friends and believes it's important to not air her family's "dirty laundry". Recently, however, Sara has been arguing a lot with her husband about chores around the house. Sara meets a casual acquaintance, Michelle, for lunch, and Michelle asks Sara how things are going with her family. Sara knows she could vent to her acquaintance.
    Imagine how she would feel in response to each of the following outcomes:
    a) Sara says that things are good, and admires her husband's recent successes at work.
    b) Sara says that things are the same as usual, and brushes off the question.
    c) Sara tells Michelle about how her husband has been upsetting her.

12) David played football in high school and even as an adult he feels like it's his duty to support and be loyal to the team. This year's team has a lot of new players, so they are not expecting to have a good season. David's friends from a nearby town ask him how he thinks the team will do this year.
    Imagine how David would feel in response to each of the following:
    a) David does not mention the team's flaws, and instead emphasizes that the players have a lot of potential and great character.
    b) David does not mention the team's flaws but tries to change the subject and says that "time will tell".
    c) David openly describes the team's limitations, and tries to distance himself from the team.

Authority Scenarios

13) Daryl deeply respects his boss at work and cares about being a great employee. One day, Daryl's boss has to leave work for an emergency and asks Daryl to handle things while he's gone.
    Imagine how Daryl would feel in response to each of the following scenarios:
    a) While his boss is away, Daryl does everything his boss asked of him, and even manages to do some extra tasks that his boss didn't ask Daryl to do.
    b) While his boss is away, Daryl does everything his boss asked of him.
    c) While his boss is away, Daryl takes too long on his lunch break and forgets to do several things his boss asked of him.

14) Prija comes from a traditional Hindu family. Recently Prija started attending college in America, and it is her first time celebrating the Hindu holiday Diwali without her family. Prija worries that the other people might think this tradition is weird.
    Imagine how Prija would feel in response to each of the following:
    a) Prija puts her worries aside and celebrates Diwali openly in her dorm. When people from her dorm see this, they are interested and want to learn more about Hindu culture.
    b) Prija celebrates Diwali privately in her dorm room.
    c) Prija chooses not to celebrate Diwali at all.

15) Zak is the apprentice of artisan Jessica, whom he greatly respects. Zak believes it is important to follow Jessica's advice as best as he can. One day Jessica asks Zak to do a task that seems to be pointless and possibly a waste of time.
    Imagine how Zak would feel in response to each of the following outcomes:
    a) Zak puts his concerns aside and works hard to do the task well.
    b) Zak completes the task with a minimal amount of effort but doesn't try to do it particularly well, and quickly moves on to other things.
    c) Zak ignores Jessica's request and spends his time doing other things.

Purity Scenarios

16) Maria recently decided to transition to a vegan diet because she thinks it will make her feel cleaner and more wholesome. Since she's new to this diet, she expects that she might slip up and eat the wrong thing on occasion. One evening Maria goes out for dinner with a friend to a restaurant that does not specialize in vegan options.
    Imagine how Maria would feel in response to each of the following outcomes:
    a) Maria chooses options from the menu that are entirely vegan and made of natural products.
    b) Maria chooses mostly vegan options, but her main dish was made with a dairy-based sauce.
    c) Maria chooses to order a cheeseburger, which is definitely not vegan.

17) Freddie recently started going to his local church and wants to be a better man. Freddie has also started attending his church's weekly men's group meeting. One day the men in this group discuss impure language and they mention that it's common for people to slip and curse or use a crude word, but it's important to work on suppressing this kind of language and avoid cursing.
    Imagine how Freddie would feel in response to each of the following:
    a) Over the next week, Freddie successfully avoids using curse words or other crude language.
    b) Over the next week, Freddie slips and says a few curse words, but also manages to catch himself before using crude language a number of times.
    c) Over the next week, Freddie frequently curses and has a hard time holding back crude language.

18) Lin considers herself to be a proper lady. For her, this means behaving in a respectful, dignified manner. While she is driving on a deserted highway on a long road trip, Lin feels a strong urge to urinate. She lives an hour away, and the closest public restroom is at a run-down, dirty gas station 20 minutes away.
    Imagine how Lin would feel in response to each of the following:
    a) Lin exerts self-control for the next hour and waits until she gets home to use the restroom
    b) Lin exerts self-control until she gets to the gas station and uses the dirty public restroom.
    c) Lin quickly parks along the side of the road, finds a narrow tree to hide behind, and urinates in public.

Appendix B

Vignettes Used in Study 6 to Test Prior Theories of Self-Conscious Emotions Against the Expectancy-Violation Account

Theories tested	Appraisal(s) manipulated	Vignette
Identity-goal (in)congruence account	1) Unexpected vs. expected success	Imagine you have [**unexpected**: never written a book before but have always wanted to, so you draft up an idea for one / **expected**: written several books and draft up an idea for another one]. Over the next year, you write the book, then submit it to a publisher. The publisher accepts it for publication.
	2) Unexpected vs. expected failure	Imagine it is your dream to run a marathon, but you have failed in the several attempts you have made so far. You find that you can usually make it about fifty percent of the distance but then become too exhausted and give up. You decide to sign up for another marathon to give it another try. Again, you fail to finish the race [**unexpected**: but this time, you make it only twenty-five percent of the total distance / **expected**: – as usual, you make it about fifty percent of the way through].
Social valuation account	3) Unexpected success is personally valued vs. socially valued	Imagine you start making designer birdhouses because [**Personal**: doing this personally means a lot to you, even though nobody in your community would pay you for them / **Social**: people in your community pay good money for them, even though you personally don't care much about making them]. For a while, you build them using basic kits that come with materials and instructions. Eventually you come up with a new design that you can only build without a kit. You buy the materials you think you'll need and work for several months. Finally, you reflect on what you built. Realistically, you feel that it is the best birdhouse that you have built so far, and much better than what you've previously made with instructions. At the same time, you reflect on how you are mostly doing this because it is [**Personal**: something you care about, even though nobody in your community would buy it / **Social**: something other people in your community pay good money for, but still not something that is personally valuable to you].
Internal attribution account	4.) Unexpected success is attributable to internal vs. external causes	Imagine that you are a high school student who is about to take an exam. On past exams in this course, you have earned grades around 85%. A few days after the exam, you get your score and learn that you earned a 95%. While handing the exams back, your teacher tells the class that they made the exam [**internal**: too hard / **external**: too easy] so most people did [**internal**: worse / **external**: better] than usual.