

SHAME AND CREATIVITY

Running head: NEGATIVE PREVENTION-ASSOCIATED EMOTIONS AND
CREATIVITY

The social regulation of shame, worry, and boredom for enhanced individual creativity:

The importance of expressive suppression in creative team environments

Helena V. González

ESC-Rennes School of Business, 2 rue Robert d'Arbrissel CS 76522,
35065, Rennes Cedex, France

Andreas W. Richter¹

Cambridge Judge Business School, University of Cambridge, Trumpington Street,
Cambridge CB2 1AG, UK

¹ Corresponding author: E-mail address: a.richter@jbs.cam.ac.uk; telephone: +44 (0)1223 339639;
fax: +44 (0)1223 339701

Abstract

We draw on the functionalist perspective of emotions (Keltner & Gross, 1999) in order to propose that ashamed employees engage in creative activity as a way to restore their positive self-image. We also propose that the shame-creativity relation is strongest if employees expose themselves via expressive suppression to a team environment that encourages creativity. We test these propositions with data from two Colombian field studies. Overall, we find mixed support for a main effect of shame on creativity but consistent support for the moderating effect of exposure to creative team environments on the link between shame and creativity. A scenario experiment confirmed restore motivation as one central mediating mechanism explaining the main and interactive effects of shame on creativity. We discuss implications for the literatures on creativity, shame, and exposure to creative team environments.

Keywords: creativity, shame, creative team environment

Suppose that your boss tells you in front of your colleagues that you made a serious mistake in a report you just prepared, and you feel terribly ashamed. Would you withdraw from the situation and try to make yourself “invisible”, wishing the working day would end so that you can go back home? Or would you engage in developing a novel and more useful report to correct your mistake and recover your standing within your team? One of the key motivators of individuals is the desire to have a positive self-image (e.g., Schlenker & Leary, 1982; Taylor & Brown, 1988), and it is this self-image that is threatened when individuals experience shame. We argue in this paper that employees experiencing shame may engage in creative activity as a result of their motivation to restore their positive self-image (i.e., their motivation to engage in activities to recover their positive self-view; De Hooge, Zeelenberg, & Breugelmans, 2010), and that the shame-creativity relation is augmented if ashamed employees expose themselves to social environments supportive of creativity.

Creativity—the generation of novel and useful ideas (Amabile, 1988, 1996)—is a valuable employee outcome associated with organizational sustainability and innovation (George, 2007). Although prior studies have examined the relationship between shame and organizational outcomes such as performance (e.g., Bagozzi, Verbeke, & Gavino, 2003), we are not aware of research on the relationship between shame and creativity. Given that shame is a negative emotion with unclear social functions (De Hooge, Breugelmans, & Zeelenberg, 2008), establishing the link between shame and creativity would contribute to our understanding of the positive consequences of shame. Moreover, it would shed light on the unclear relationship between negative affective experiences and creativity (e.g., Amabile, Barsade, Mueller, & Staw, 2005; Davis, 2009).

In order to develop the link between shame and creativity, we draw from the functionalist perspective of emotions (Frijda, 1986; Keltner & Gross, 1999; Keltner & Haidt, 1999) important ideas concerning the creative potential of shame. Specifically, we argue that

ashamed employees engage in creative activity in order to restore their positive self-image, and that the shame-creativity relation is strongest if employees expose themselves to creative team environments via suppressing their shame expressions (i.e., via suppressing the avoidance and withdrawal tendencies associated with shame).

We contribute to the emotions literature by providing insights into how to translate one of the most intense negative emotions into a valuable organizational outcome—creativity. Although shame is an emotion commonly experienced in the workplace (Bagozzi et al., 2003), researchers have not yet fully examined its social functions (De Hooge et al., 2008). Thus, our work counterpoints research that has predominantly focused on the negative consequences of shame (e.g., Behrendt & Ben-Ari, 2012; Tangney, Miller, Flicker, & Barrow, 1996; Tangney, Wagner, Fletcher, & Gramzow, 1992; for exceptions, see De Hooge et al., 2008, 2010; De Hooge, Zeelenberg, & Breugelmans, 2011) by offering a fresh perspective that points to its positive outcomes.

We also contribute to research on negative affect and creativity in various ways. By explicitly focusing on shame, we respond to the call for examination of discrete negative emotions with creative potential in order to elucidate the unclear negative affect-creativity relationship (Amabile et al., 2005; Davis, 2009). Likewise, through examining the interplay of employees' shame experiences with their social context for employee creativity, we contribute to the emerging interactionist perspective on creativity (Zhou & Hoever, 2014). Finally, we illuminate the processes through which shame affects creativity by examining restore motivation as one central mediating mechanism.

Theoretical Background

Shame is an overwhelming and unpleasant emotion (i.e., a typically discrete and intense but short-lived affective experience in reaction to a stimulus; Elfenbein, 2007; Smith & Ellsworth, 1985) that occurs in response to a self-attributed failure in meeting the

expectations of others (Bagozzi et al., 2003; Brown, González, Zagefka, Manzi, & Čehajić, 2008; Lewis, 1992; Smith & Ellsworth, 1985). In other words, shame arises when individuals encounter differences between what they actually do (actual self) and what they are expected to do (ought self; Ghorbani, Liao, Çayköylü, & Chand, 2013; Higgins, 1987). In organizational settings, experiences of shame may be triggered by failure to meet obligations, committing a mistake in a report or presentation, being criticized by a peer or supervisor, or failing to meet performance standards (Bagozzi et al., 2003; Smith & Ellsworth, 1985). Shame experiences make individuals feel and fear negative evaluations from others (Agrawal, Han, & Duhachek, 2013; De Hooge et al., 2010), and it is this social scrutiny that motivates them to protect the self from further damage (Ferguson, 2005; De Hooge et al., 2010, 2011). As such, coping with a damaged self-image is a central concern for ashamed employees (De Hooge et al., 2010, 2011).

In order to elude negative evaluations from others, individuals typically *express* shame in the form of withdrawal and avoidance tendencies (including avoidance of eye contact, a hunched posture, and withdrawing from contact with others by hiding in one's office or remaining silent in meetings; Bagozzi et al., 2003; Fischer & Tangney, 1995). By means of withdrawal from, or avoidance of situations related to the shame experience, individuals aim to protect the self from further damage.

In light of the unpleasantness of shame experiences, it is not surprising that prior research has predominantly examined their negative effects, including low self-efficacy and self-esteem, social anxiety, and depression (e.g., Lazarus & Folkman, 1984; Leary & Kowalsky, 1995; Tangney et al., 1996; for exceptions, see Bagozzi et al., 2003; De Hooge et al., 2010).

Overview of Studies

Based on the idea that emotions are functional and can motivate behavior that is beneficial for the individual and the community, we examine in this paper whether shame may positively affect individual creativity. By drawing on the time-sampling methodology, study 1 adopts a longitudinal and fine-grained approach to examine main and interactive effects of daily shame experiences on creativity in four Colombian organizations. Study 2 draws on a cross-sectional survey design to examine whether the findings of study 1 extend to the personal level, as well as to different types of creativity (i.e., incremental versus radical creativity). Study 3 draws on a scenario experiment to examine the motivational mechanisms that drive the main and interactive effects of shame on creativity.

Study 1

Shame and Creativity

The functionalist perspective of emotions (Frijda, 1986; Keltner & Gross, 1999; Keltner & Haidt, 1999) suggests that negative emotions motivate behavior intended to deal with a threatened goal or concern. According to this perspective, shame researchers have recently suggested that the natural behavioral reaction following shame is reparative action (De Hooge et al., 2011). In support of this view, recent studies have found that (to the extent that it is possible and not too risky) shame motivates individuals to engage in activities directed at restoring their positive self-image (Bagozzi et al., 2003; De Hooge et al., 2010).

One such activity, overlooked by prior research, may be creativity (cf. De Hooge et al., 2011). The motivation to restore the damaged self-image likely requires that ashamed individuals deviate from previous behavior in ways that others evaluate as different and positive. Coming up with ideas that are novel and useful may therefore present a suitable measure for ashamed individuals to restore their positive self-image. Thus, we expect ashamed employees to engage in creativity as a way to deal with their threatened self-image

and therefore as a means to restore their positive self-view and recover their position within their team.

Hypothesis 1. There is a positive effect of shame on creativity.

Although we expect shame to spur creativity, ashamed individuals may find it difficult to come up with novel and useful ideas if their most proximal social environment does not encourage creativity. Shame is a ‘social’ emotion that results from interactions with others (Ashforth & Humphrey, 1995; Fischer & Tangney, 1995; Gilbert, 1997), and the experience of shame makes individuals feel concerned about social evaluations (Behrendt & Ben-Ari, 2012; cf. Agrawal et al., 2013). Ashamed individuals may therefore be particularly receptive to influences from their social environment, as well as willing to adjust their behavior in interpersonal relationships (Agrawal et al., 2013; Frank, 1988) in order to meet the standards that the social environment signals as desirable in an attempt to restore their self-image.

In contemporary organizations, the proximal work group or team represents an almost ubiquitous social context within which employee creativity is enacted (Hirst, van Knippenberg, Chen, & Sacramento, 2011; Hirst, van Knippenberg, & Zhou, 2009). Therefore, team environments that support and encourage creativity (i.e., team environments “in which members encourage each other to engage in creative activities and to employ creative work processes” Gilson, Mathieu, Shalley, & Ruddy, 2005, p. 522) may provide contextual cues (Mischel, 1977) to direct the efforts of ashamed employees towards the generation of novel and useful ideas. In other words, such team environments set expectations and standards that creative activity is desirable.

In addition, creative team environments also represent a social resource from which the creativity of ashamed employees may benefit. Not only may co-workers serve as creative role models (Zhou, 2003), but employees may similarly benefit from ideas, advice, and

creativity-related support provided by colleagues (Baer, 2010; Cattani & Ferriani, 2008; Perry-Smith, 2006; Zhou, Shin, Brass, Choi, & Zhang, 2009). Moreover, teams promoting the generation of new ideas may provide confidence to employees experiencing shame by showing willingness to try new things even if they are risky (cf. Gilson et al., 2005). Thus, creative team environments may provide both direction and social resources to assist ashamed employees when engaging in creative activity.

However, a creativity-stimulating social context may not be enough, in and of itself, to fuel the creativity of ashamed employees, if employees do not manage to access the creative support provided by their team. The withdrawal and avoidance tendencies inherent to the expression of shame may result in employees eluding social situations (e.g., Bagozzi et al., 2003; cf. Frijda, Kuipers, & ter Schure, 1989; Smith & Ellsworth, 1985) in an attempt to avoid negative evaluations and further damage to their self-image. Thus, although the *experience* of shame may bear creative potential, the *expression* of shame may lead employees to cut themselves off from the creative support and stimulation provided by team members.

We therefore argue that it is necessary for ashamed employees to self-regulate their emotional expression in interactive social settings in order to *expose* themselves to the cues and resources provided by creative team environments. Emotion regulation strategies may serve individuals in coping with shame, as well as in conforming to standards of socially desirable feelings and behaviors (Baumeister, Bratslavsky, Muraven, & Tice, 1998; DeWall, Baumeister, Mead, & Vohs, 2011). Although various emotion regulation strategies exist (e.g., Gross 1988a, 1988b), expressive suppression appears particularly relevant for emotion regulation in social contexts (Butler & Gross, 2004; cf. Lam, Huang, & Janssen, 2010). Expressive suppression reflects a form of response-focused emotion regulation that prescribes inhibition of expressive behavior, rather than of the emotional experience itself (Butler &

Gross, 2004). It thereby preserves the informational and motivational drivers inherent to negative affective experiences (Butler et al., 2003).

Although expressive suppression can entail various personal and social costs such as taxed cognitive resources (Butler et al., 2003; Gross 1998a, 1998b, 2002; Gross & John, 2003; Pennebaker, 1990; Richards & Gross, 2000; Schaubroek & Jones, 2000), “at the same time, it is apparent that if the act of suppression is contextually sensitive, it may serve desirable personal and interpersonal functions” (Butler & Gross, 2004, pp. 116–117).

Through expressive suppression, employees eliminate counterproductive action tendencies (Frijda, 1993)—in the case of shame, associated avoidance and withdrawal tendencies. Thus, where employees work in creative team environments, expressive suppression may serve to expose ashamed employees to creativity-supportive cues and resources, which in turn may result in enhanced creativity.

In sum, we hypothesize that the relationship between shame and creativity is *jointly* moderated by a creative team environment and exposure to that environment through expressive suppression: If emotional displays (i.e., associated avoidance and withdrawal tendencies) are suppressed and team environments are supportive of creativity, the experience of shame results in creativity. However, if ashamed employees do not suppress their emotional displays, failure to realize team expectations as well as to garner creative resources from the social environment precludes the realization of creative benefits. Conversely, if employees do not work in teams that are supportive of creativity, then social expectations, interactions, team goals, and tasks will not associate with creativity (cf. Shalley, Zhou, & Oldham, 2004), and the expression of shame—irrespective of whether these displays are expressed or suppressed—will consequently be unrelated to creativity.

Hypothesis 2. The relation between shame and creativity is jointly moderated by expressive suppression and creative team environment, such that shame positively

predicts creativity if both expressive suppression and creative team environment are high.

Method

We conducted a diary study to examine Hypotheses 1 and 2. We also collected creativity ratings from supervisors in order to test both hypotheses with an alternative creativity outcome.

Sample and Procedure

We collected data from employees working in 64 teams across four Colombian organizations. Initial conversations with managers in each organization revealed that employees were both required and encouraged to generate and implement new ideas, as well as to make suggestions for improving their work. Thus, employee creativity was a relevant and desirable outcome for employees in these organizations. We conducted informal piloting by administering semi-structured interviews with a selection of team leaders from each of the participating organizations. We did this in order to understand the role of creativity for everyday work, to ensure that all aspects of relevance for our research were covered, and to ensure that survey items were intelligible for participants.

The first organization was an advertising designer providing design, production, and distribution of point of sales displays. This organization provided services such as in-house designing, assembling, and bulk and drop shipping for its clients. The second organization was a large governmental company in charge of the formulation, adoption, and regulation of national environmental policies, as well as the administration of housing, territorial development, potable water, and basic sanitation services. The third organization was a state-sponsored provider of social services dedicated to contributing to the development of local entrepreneurship activity. The fourth organization was the research and development unit of a large oil services company.

Within each organization, we identified groups who met the definition of organizational teams advanced by Kozlowski and Bell (2003), i.e. groups of two or more individuals who fulfilled the following criteria: the tasks they performed were relevant for the organization; they shared common goals; their job implied interacting socially; they showed task-interdependence; team boundaries were preserved; and finally, the organizational context influenced how the team interacted with other teams, as well as what the boundaries and constraints to the team were. All teams included in the study followed these criteria, allowing us to compare teams across organizations.

A week prior to data collection, we instructed employees on the sampling methodology and the general purpose of the study, and assured confidential treatment of all data. As participation was entirely voluntary, we incentivized participation with the delivery of feedback reports to each participant upon study completion, daily tokens of appreciation, and a prize to be raffled off among employees who had completed all surveys. These strategies were applied equally to all participants across organizations.

We invited 72 teams to participate, out of which 380 team members in 64 teams consented. We sent two types of electronic surveys to team members—an initial background survey and twice-daily surveys. We administered the background survey at the beginning of the project in order to assess creative team environment, task routine, shame trait, and demographics. All 380 participants returned this survey (100%).

Out of this sample, 59 individuals did not respond to any of the daily surveys. In 36 of these cases, a failure of the internet service provider for more than 48 hours prevented access to the survey webpage. The remaining 23 individuals indicated that they had received new work assignments or had to travel during the study period without internet access, and therefore could not complete the surveys. This reduced the sample to 321 employees. In order to ensure that we did not include teams with insufficient team response rates, we applied

Dawson's (2003) selection rate ($(N - n)/Nn$), a formula incorporating the number of responses per team (n) and team size (N) in order to determine the accuracy of incomplete team data in predicting true scores. We chose a selection rate of .32 (i.e., those teams with a selection rate greater than .32 were excluded from further analysis), a threshold chosen to ensure that sample and true scores correlate to .95 or higher. We deleted eleven teams (equivalent to 43 participants) from further analyses due to a selection rate higher than .32. This decreased the sample to 306 employees working in 53 teams (81% response rate).

Out of 3,060 possible daily surveys (306 participants x 5 days x 2 surveys per day), participants returned 2,505 (82% response rate). Out of these, 1,350 corresponded to morning surveys and 1,155 to afternoon surveys. We included only observations for which we could match morning and afternoon responses. This reduced the day-level sample to 999 observations (equivalent to 1,998 surveys = 999 morning surveys + 999 afternoon surveys) from 286 participants. We conducted logistic regression analysis with attrition as dependent variable (categorizing respondents as continuers or dropouts) and studied variables at the day-level as predictor variables, in order to assess whether drop out was systematic (Goodman & Blum, 1996). This analysis revealed no significant effects, suggesting the data was missing at random. Participants were on average 36.49 years old ($SD = 9.74$), and worked for the company on average 4.52 years ($SD = 5.11$). 175 participants (61%) were female, and 237 (83%) held a Bachelor's degree or higher.

We sent out the twice-daily surveys morning and afternoon, Monday to Friday, for one week, by html links. We asked participants to complete the morning questionnaire within the first hour following their commencement of work activities (Binnewies & Wörnlein, 2011). This link was no longer accessible after two hours in order to ensure that reported experiences and behaviors referred to a particular morning, thereby preventing the occurrence of recall biases distorting the data (cf. Bono, Foldes, Vinson, & Muros, 2007). The morning

questionnaire assessed shame, happiness, and expressive suppression. We then sent the link for the afternoon questionnaire 30 minutes prior to closing time. The afternoon questionnaire asked employees to rate their levels of shame, happiness, and creativity during the working day, and was accessible until midnight. In line with previous studies on affect and creativity (Amabile et al., 2005), we chose this lagged time period to allow for creative incubation, as well as to ensure temporal precedence of predictor relative to outcome variables (cf. Cook & Campbell, 1979).

On the last Friday of the diary study, we sent electronic surveys to the managers supervising the teams in order to gather ratings of employee creativity for the period of this study.

Measures

With the exception of shame and happiness, scales were translated into Spanish following the standard back-translation procedure (Brislin, 1980). All scales are listed in the appendix.

Shame. Due to the unavailability of a short but parsimonious measure suitable for repeated application in a diary study, we developed a theory-driven scale measuring the experience of shame in line with theoretical conceptualizations of this emotion (Fischer & Tangney, 1995; Frijda et al., 1989; Higgins, 1987; Smith & Ellsworth, 1985) specifically for the purpose of this study.

In order to develop the scale, we first created an initial item pool to capture shame as well as two other negative emotions (worry and boredom) that are similar inasmuch as their expression associates with a tendency to avoid or withdraw from situations related to the emotional experience (Oathes, Siegle, & Ray, 2011; Pekrun, Goetz, Daniels, Stupinsky, & Perry, 2010). We created 10 items per emotion. Items were constructed following suggestions by Alreck and Settle (2003), such as item brevity, clarity, and unidimensionality. To boost

content validity, three subject matter experts (psychologists and native Spanish speakers) were asked to sort items blindly to one of the three emotions as well as to judge how unambiguously they could allocate each item to its matching emotion. Items misallocated by more than one expert were excluded from further analysis. The final shame scale comprised four items. A final review by four employees who did not participate in the main study suggested that items were intelligible without further amendments.

We measured the extent to which participants were currently experiencing shame on a five-point scale ranging from 1 (*not at all*) to 5 (*very much so*). A sample item is, “I feel I want to disappear from view”. Cronbach’s alpha was high ($\alpha = .89$).²

Expressive suppression. Emotions can be regulated at different stages of the emotion process (i.e., from the registration of the stimulus to the actual emotional display; Gross, 1998a, 1998b). We measured the suppression of emotional displays because it has the highest impact on individual outcomes (Elfenbein, 2007) and the strongest impact on social interactions (Butler & Gross, 2004). In contrast to other emotion regulation strategies such as reappraisal, in which individuals regulate their emotional experience by reinterpreting the emotion-relevant stimuli (Gross, 1998a), expressive suppression involves a process of inhibiting emotional displays without altering the emotional experience itself (Butler et al., 2003; Gross, 1998a). Since we needed a measure sensitive to temporal fluctuations of expressive suppression, we used the two-items scale developed by Grandey, Dicter and Sin (2004) measuring response-focused emotion regulation. Because two-item measures may prevent proper estimation of reliability, we added two items to the original scale designed to match the very same theoretical concept of suppression of emotional displays (Grandey et al.,

² We further validated the shame scale with a series of factor analyses using an independent sample ($N = 100$) of Colombian employees. These analyses served to establish the discriminant and convergent validity of the shame scale vis-à-vis other negative emotions. These results were further corroborated by a series of confirmatory factor analyses establishing the scale’s discriminant and convergent validity vis-à-vis other discrete negative emotions included in the study 1 survey. These analyses are available from the authors on request.

2004). We maintained the scale's original checklist format ("yes" or "no"). Following prior studies (e.g., Grandey et al., 2004; Gross & John, 2003), we measured expressive suppression with reference to shame in the morning questionnaire. A sample item is, "I tried to act as if nothing was happening" ($\alpha = .76$).

Creative team environment. We used the three-item measure developed by Gilson et al. (2005) to measure creative team environment in the background survey on a 7-point scale ranging from 1 (*not at all*) to 7 (*completely*). A sample item is, "In my team, we welcome new ideas" ($\alpha = .91$).

Creative team environment is a team-level construct, which should be reflected in both a considerable degree of agreement among team members and considerable variance of employee perceptions across teams (Klein & Kozlowski, 2000). Thus, we calculated interrater agreement ($r_{wg[j]}$; James, Demaree, & Wolf, 1984) and interrater reliability (ICC[1] and ICC[2]; Bliese, 2000) in order to empirically justify aggregation. Average interrater agreement met the conventional cut-off point of .70 (mean $r_{wg[j]} = .71$, Klein et al., 2000, p. 521), and variance between groups was significant, $F(61, 246) = 1.60, p < .01$; $ICC(1) = .11$, $ICC(2) = .37$. The $ICC(1)$ coefficient is comparable to the median value of .12 reported in James's (1982) summary of climate reviews. The $ICC(2)$ score, however, was lower than expected, which could be explained in part by the small size of teams in our sample (Bliese, 2000). By taking into consideration the information from all coefficients as well as the theoretical foundation for aggregation, we conclude that aggregation was justified (cf. Klein et al., 2000).

Creativity. We collected both self-reports and supervisor ratings of creativity, because these may capture different facets of the overall creativity construct (Amabile & Mueller, 2008). Whereas employees may provide more reliable ratings of those aspects of creativity that are not directly observable or have not been uttered (cf. Beghetto & Kaufman,

2007), supervisor ratings were found to incorporate more strongly aspects of creativity that are brought to their attention (Randel, Jaussi, & Wu, 2011). Supervisor ratings are frequently used in creativity research, in part because they were shown to correlate with objective indicators of creativity (Tierney, Farmer, & Graen, 1999). In order to account for the incubation process inherent to creativity (Amabile et al., 2005), as well as to eliminate biases related to simultaneous construct measurement (cf. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), we measured self-reported creativity in the afternoon questionnaire. The team leaders who supervised employees provided ratings of employees' creativity during the study period on the last Friday afternoon of the diary study.

Both self-reported and supervisor rated creativity were measured with the 13-item scale developed by Zhou and George (2001), ranging from 1 (*not at all characteristic*) to 5 (*very characteristic*). A sample item is, "(To what extent did you, today:) Come up with creative solutions to problems" (self-report creativity, $\alpha = .94$; supervisor rated creativity, $\alpha = .96$).

Control variables. We controlled for shame-trait to make sure reported findings on shame experiences are not due to more stable shame dispositions. Following previous research on affect (Watson, Clark, & Tellegen, 1988) and to warrant comparability, we measured shame-trait with the same items as in the daily surveys, but changed the time frame for "how do you usually feel" ($\alpha = .84$). As the task might vary with respect to creativity requirements, we controlled for task routine with Jehn's (1995) 20-item scale ranging from 1 (*not at all*) to 7 (*absolutely*). An example item is, "To what extent is your job tiresome?" ($\alpha = .83$). Following prior research on creativity (e.g., Shin, Kim, Lee, & Bian, 2012; Shin & Zhou, 2007), we controlled for gender and organizational tenure, because both have been associated with creativity (Gilson & Shalley, 2004; Hirst et al., 2009; Tierney & Farmer, 2002). We measured gender with a single survey item. We measured organizational tenure

with a single item reflecting the total number of years that employees have been affiliated with the organization. In order to account for potential organizational influences, we controlled for organizational affiliation with dummy variables created for each organization.

Bledow, Rosing and Frese (2013) pointed to the importance of fluctuations in positive and negative affect as predictors of creativity. In order to account for this, we controlled for shame in the afternoon and happiness in the morning and in the afternoon (happiness morning, $\alpha = .94$; happiness afternoon, $\alpha = .95$; shame morning, $\alpha = .89$; shame afternoon, $\alpha = .85$). We developed the happiness scale following the same procedure that we outlined previously for the development of the shame scale. We measured the extent to which participants were currently experiencing happiness with four items on a five-point scale ranging from 1 (*not at all*) to 5 (*very much so*). An example item was, “Happy because things have gone well”.

Analytic Strategy

The data structure comprised three levels in which days (level 1) were nested in persons (level 2) who were nested in teams (level 3). In order to account for the non-independence of observations, we employed random coefficient growth modeling techniques in the form of hierarchical multivariate linear modeling (HMLM2; Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2004) when examining temporal, day-level changes of creativity, but hierarchical linear modeling (HLM2; Raudenbush & Bryk, 2002) when examining supervisor rated creativity of employees nested in teams. It should be noted that assessing creativity as both an intrapersonal process (daily self-reports) and an interpersonal variable (supervisor ratings) is sound with the definition of creativity adopted in this research.

For analyses on day-level creativity, level 1 (day-level) uses time-related variables to predict changes across the five study days. In our study, this level included shame, happiness, expressive suppression, and self-reported creativity. Level 2 (person-level) captures variables

that vary across participants. In our analysis, this level comprised gender, task routine, organizational tenure, and shame-trait. Level 3 (team-level) refers to variables varying across teams. These were dummy codes of organizational affiliation and creative team environment.

Conversely, for analyses on supervisor ratings of creativity, level 1 (person-level) refers to variables varying across participants. These included shame-trait, organizational tenure, task routine, gender, as well as daily shame (morning), happiness (morning), and expressive suppression averaged across the five study days. Level 2 (team-level) refers to variables that varied across teams. It included dummy codes of organizational affiliation and creative team environment.

In line with previous research (e.g., Ilies, Wilson, & Wagner, 2009; Sonnentag, 2003; cf. Hofmann & Gavin, 1998), we group-mean centered level 1 variables but grand-mean centered predictor variables at levels 2 and 3 (Raudenbush & Bryk, 2002) across models.

Results

Table 1 contains means, standard deviations, and correlations of study variables. Self-report creativity did not significantly correlate with supervisor ratings of creative performance ($r = .12, p = ns$), suggesting that these two measures captured different facets of creativity.

We performed several confirmatory factor analyses in order to establish discriminant validity among the self-report measures. We tested a model with the seven independent factors—creativity self-report, creative team environment, happiness morning, shame morning, shame-trait, expressive suppression morning, and task routine—against various alternative models where we collapsed scales to create one- to six-factor models on theoretical grounds. The seven-factor model had the following fit statistics: $\chi^2 = 579.89, df = 343, p < .01, RMSEA = .03, CFI = .98$. Overall, these results show that the seven-factor model provides a good model fit as well as a superior fit relative to the alternative models

(compared to the six-factor model collapsing shame and shame-trait into a single factor, $\Delta\chi^2 = 111.88$, $df = 6$, $p < .001$). These analyses provide evidence that the perceptual measures we used have discriminant validity.

Prior to hypotheses testing, we examined whether significant variance in day-level creativity resided between employees and teams, which would require the use of multi-level modeling (cf. Hofmann, 1997; Raudenbush & Bryk, 2002). We therefore tested a one-way ANOVA (null) model on day-level creativity where no predictors were entered at levels 2 (person-level) and 3 (team-level). Significant variance in day-level creativity explained by person- and team-levels, respectively, would suggest examination of person- and team-level predictors. We estimated the proportion of variance explained at the within person, between person, and between team levels in creativity by examining the level-3 residual variance of the intercept (τ_β), the level-2 residual variance of the intercept (τ_π), and the level-1 residual variance (σ^2). The proportion of variance at the within person, between person and between team levels is calculated as $\sigma^2/(\sigma^2 + \tau_\pi + \tau_\beta)$, $\tau_\pi/(\sigma^2 + \tau_\pi + \tau_\beta)$, and $\tau_\beta/(\sigma^2 + \tau_\pi + \tau_\beta)$, respectively. Results showed that 29% of the variance in creativity resided within persons, 59% between persons, and 12% between teams. In an analogous manner, we examined the amount of variance in supervisor creativity ratings that resides between teams. This analysis revealed that 22% of the variance in person-level creativity rated by leaders resided between teams. Overall, the large percentage of variance in creativity that resides between individuals and teams suggests examination of person- and team-level predictors.

Hypotheses Testing

We followed established procedures in all analyses (Hofmann, 1997; Raudenbush & Bryk, 2002; cf. Mathieu & Rapp, 2009; Tables 2 and 3). To test whether shame positively predicted creativity (Hypothesis 1), we specified a main effects model (Model 1, Tables 2 and 3), in which only shame in the morning, expressive suppression, creative team environment,

and the set of control variables were included. Contrary to our expectations, shame was not significantly related to self-report creativity ($\gamma = -.02, t = -.39, p = ns$) or managerial ratings of creativity ($\gamma = -.04, t = -.72, p = ns$). Thus, Hypothesis 1 was not supported.

We specified a slope-as-outcome model to test Hypothesis 2, which proposed that shame in the morning positively predicts creativity if employees both suppress their emotional displays and levels of creative team environment are high. Model 2 (Tables 2 and 3) summarizes relevant results. To test this hypothesis, we first entered the control variables, the main effects (shame in the morning, expressive suppression, and creative team environment), and the three two-way interaction terms as combinations of the three main effects into the model. A significant three-way interaction term added in a final step would provide initial support for our hypothesis. This three-way interaction term was significant for both measures of creativity ($\gamma_{\text{self-report}} = .07, p < .05$; $\gamma_{\text{supervisor rating}} = .12, p < .05$).

Additional simple slopes analyses (Aiken & West, 1991) revealed that, for self-reports of creativity, the slope for shame and creativity was positive and significant for very high levels (mean + 2 *SD*) of expressive suppression and creative team environment ($\gamma = .23, t = 2.24, p < .05$). For high levels of expressive suppression and creative team environment (mean + 1 *SD*), the slope was not significant ($\gamma = .12, t = 1.95, p = ns$). None of the remaining slopes was significant. For supervisor ratings of creativity, the slope for shame and creativity was positive and significant for high levels (mean + 1 *SD*) of both expressive suppression and creative team environment ($\gamma = .17, t = 2.09, p < .05$). None of the remaining slopes was significant. Figures 1 and 2 depict these interactions at high (mean + 1 *SD*) and low (mean - 1 *SD*) levels of expressive suppression and creative team environment (Aiken & West, 1991), and illustrate that shame predicts creativity positively if both expressive suppression and creative team environment are high. Overall, we conclude that Hypothesis 2 was substantially supported.

Discussion

Overall, study 1 failed to provide support for a main effect of shame on creativity. However, it provided substantial support for the hypothesis that shame experiences positively predict creativity if employees suppress shame expressions in creative team environments. Specifically, we found support for the idea that two conditions must *jointly* be in place for ashamed employees to engage in creative activity: First, the social environment needs to encourage and support creativity. Second, individuals need to expose themselves to influences from their social environment by suppressing their shame display (i.e., by suppressing associated avoidance and withdrawal tendencies). Under these conditions, creative behavior is a means of meeting the standards that the social environment signals as desirable, and is therefore instrumental in recovering employees' positive self-image through meeting social expectations.

Study 1 examined day-to-day, i.e. intrapersonal fluctuations of employee emotions and behaviors. This raises the question as to whether findings generalize to more typical feelings and behaviors that vary across individuals. Such an extension would serve to define the boundary conditions of our theory. Moreover, examination of different types of creativity may serve to broaden the scope of this research, and thereby expand its contribution. Study 2 aims to address these issues.

Study 2

The objectives of study 2 are twofold: First, we aim to test Hypotheses 1 and 2 with a new sample in order to examine whether the hypothesized effects of shame on creativity extend to more typical, generalized feelings and behaviors at the person level. We do so by conceptualizing shame and expressive suppression as individual difference variables measuring employees' tendency to experience shame, as well as to suppress the expression of emotions in general. Second, we aim to expand the scope of the contribution of this research

by examining different types of creativity—incremental versus radical creativity. Because incremental creativity involves less risk and uncertainty than radical creativity, it may present a more secure, and therefore suitable form of behavior for ashamed employees who seek to restore their damaged self-image.

Main and Interactive Effects of Shame on Creativity at the Person Level

We examined shame and expressive suppression in study 1 as within-person processes that are more fleeting and vary across days. This raises the question of whether comparable dynamics may be observed for more generalized shame experiences and expressive suppression tendencies at the person level. Such an extension would allow for more generalized conclusions regarding the main and interactive effects of shame on creativity.

Conceptualizing shame as an individual difference variable suggests that we capture general tendencies to experience shame in response to varying situations, rather than a particular shame experience in response to a specific situation. In a similar vein, conceptualizing emotion regulation as an individual difference variable allows us to examine more stable emotion regulation tendencies rather than more specific emotion regulation behaviors (Gross & John, 2003).

We argue that the previously outlined theoretical mechanisms underlying the main and interactive effects of shame on creativity are not limited to intrapersonal processes, but similarly apply to more typical shame experiences and emotion regulation tendencies at the person level. We therefore expect that more generalized shame experiences and expressive suppression tendencies will result in comparable dynamics with respect to creativity as proposed in Hypotheses 1 and 2.

Hypothesis 3. There is a positive effect of person-level shame on creativity.

Hypothesis 4. The relation between person-level shame and creativity is jointly moderated by person-level expressive suppression and creative team environment, such

that shame positively predicts creativity if both expressive suppression and creative team environment are high.

Main and Interactive Effects of Shame on Incremental versus Radical Creativity

In line with the notion that creative ideas may vary from minor adaptations to major or radical breakthroughs (Amabile, 1996; Mumford & Gustafson, 1988), creativity researchers have suggested distinguishing incremental from radical creativity (Gilson & Madjar, 2011; Madjar, Greenberg, & Chen, 2011). Radical creativity refers to ideas that substantially depart from existing organizational practices and challenge the status quo (Gilson & Madjar, 2011). For example, switching the traditional in-situ education to ‘on-line’ formats was a radically new idea for the education sector, because its implementation substantially changed the delivery of education. Conversely, incremental creativity refers to ideas that involve minor adjustments to existing organizational practices and products. For example, optimizing an established online course based on student feedback (without substantial changes to the syllabus) represents the implementation of an incremental idea. Although creativity researchers have started to identify differential predictors for radical and incremental creativity (e.g., Gilson, Lim, D’Innocenzo, & Moye, 2012; Gilson & Madjar, 2011; Madjar et al., 2011), the bulk of organizational creativity research has treated creativity as a one-dimensional construct.

From the vantage point of shame, the distinction between incremental versus radical creativity has important theoretical implications. The development of radically novel ideas is risky and uncertain, because it aims to challenge the status quo substantially (Baer, 2012; Gilson et al., 2012; Madjar et al., 2011). Conversely, incremental creativity is a ‘safe’ activity inasmuch as it aims to optimize existing methods, processes, or products without substantially challenging the status quo (Gilson et al., 2012). Consequently, the development

of incremental ideas that do not challenge the status quo may represent an assured path to restore the positive self-image of employees with shame experiences.

Hypothesis 5. There is a positive effect of person-level shame on incremental (but not radical) creativity.

As outlined previously, full exploitation of the creative potential of shame may require that ashamed employees expose themselves to environments supportive of creativity through expressive suppression. If employees who often experience shame work in creative team environments and expose themselves to such environmental influences, the development of incremental ideas may provide them with a less risky and uncertain opportunity to restore their damaged self-image. We therefore suggest that employees who often experience shame, tend to suppress their emotional expressions, and work in creative team environments will engage in the development of incremental ideas as a way to measure up to the team's expectations in order to restore their positive self-image.

Hypothesis 6. The relation between person-level shame and incremental (but not radical) creativity is jointly moderated by person-level expressive suppression and creative team environment, such that shame positively predicts incremental creativity if both expressive suppression and creative team environment are high.

Method

Sample and Procedure

We collected data from multiple teams of a Colombian health care organization. Past research has shown that creativity is of particular relevance for health care teams as a means to cope with complex and multi-faceted tasks (Borril, West, Shapiro, & Rees, 2000). In line with this work, initial conversations with managers suggested that employee creativity was relevant and desirable for most teams in the health care organization that we studied. Prior to

the main study, we conducted exploratory work using semi-structured interviews with a selection of team leaders in order to understand the role of creativity in their daily work. Out of 46 teams that we contacted, 44 teams agreed to participate (96% response rate). We checked and confirmed that teams fulfilled the same definitional criteria of organizational teams that we outlined in study 1 as proposed by Kozlowski and Bell (2003). All teams included in the study met these criteria.

We subsequently mailed questionnaires to each participant of those 44 teams. These surveys assessed shame, happiness, expressive suppression, task routine, creative team environment, and demographics. 186 out of 206 employees returned usable questionnaires (90% response rate). Consistent with study 1, we applied Dawson's (2003) selection rate to warrant adequate response rates from each participating team. Consistent with study 1 we used a selection rate of .32 as cut-off point. We removed one team (equivalent to 3 participants) from the sample because of a selection rate greater than .32, resulting in a final sample of 185 employees from 43 teams. On average, participants were 33.85 years old ($SD = 6.97$) and worked for the organization for 2.97 years ($SD = 4.00$). 140 (75%) participants were female, and 98 (53%) held a Bachelor's degree or higher.

At the same time that we collected the employee questionnaires, we gathered employee creativity ratings from the teams' 17 supervisors.

Measures

Consistent with study 1, with the exception of shame and happiness, scales were translated into Spanish following the standard back-translation procedure (Brislin, 1980). All questions, including the supervisors' rating of creativity, instructed participants to refer to the last six months.

Shame. Participants reported on the same measure as in Study 1 the extent to which they had experienced shame during the last six months, ranging from 1 (*not at all*) to 7 (*very*

much so; $\alpha = .90$). This measure differs from the shame measure in study 1 inasmuch as it captures typical, more general experiences of shame that vary across participants, rather than day-to-day fluctuations of shame that vary across days.

Expressive suppression. The measure we used in study 1 (Grandey et al., 2004) was designed to assess emotion regulation as an intrapersonal construct, to suit the within-subject design of the diary study. However, this approach is less apt to capture interpersonal differences in emotion regulation suiting the cross-sectional survey design in study 2. Furthermore, as we wanted to test whether the within-person effects of expressive suppression found in study 1 extend to the person level, we used Gross and John's (2003) scale, which explicitly assesses individual (rather than intrapersonal) differences in the use of emotion regulation strategies in general. Thus, whereas we assessed differences within individuals in the use of expressive suppression of shame in study 1, we assessed differences between individuals in the general tendency to use expressive suppression to regulate emotions in study 2. This four-item scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item is, "I control my emotions by not expressing them" ($\alpha = .80$).

Creative team environment. We used the same three-item measure developed by Gilson et al. (2005) that we had used in study 1 to measure creative team environment ($\alpha = .87$). We calculated interrater agreement (r_{wgljj} ; James et al., 1984) and interrater reliability (ICC[1] and ICC[2]; Bliese, 2000) in order to empirically justify aggregation. Interrater agreement was high (mean $r_{wgljj} = .82$), and variance between groups was significant, $F(42, 142) = 1.48, p = .05$; $ICC(1) = .10, ICC(2) = .32$. The ICC(1) and ICC(2) coefficients are comparable to study 1. Considering the information from all coefficients, as well as a strong theoretical justification for aggregation, we conclude that aggregation to the team level is justified (cf. Klein et al., 2000).

Creativity. We asked supervisors to rate incremental and radical creativity for each employee they supervised, using Baer's (2010, 2012) creativity scales. The three-item scales ranged from 1 (*not at all characteristic*) to 7 (*extremely characteristic*). An example item of radical creativity is, "developed breakthrough ideas—not minor changes to existing products/services." ($\alpha = .93$). An example item of incremental creativity is, "developed incremental ideas—not major changes to existing products/services." ($\alpha = .97$).

In order to create a total creativity scale, we collapsed the six creativity items ($\alpha = .95$). The use of a compound measure of overall creativity is sound with the rationale that creative ideas comprise both minor adaptations and major or radical breakthroughs (Amabile, 1996; Mumford & Gustafson, 1988).

Control variables. Consistent with study 1, we used the same set of control variables (i.e., gender, organizational tenure, happiness, and task routine). We changed the 20-item task routine scale used in study 1 in order to reduce survey length. We measured task routine with the four-item scale developed by Morgeson and Humphrey (2006) ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) ($\alpha = .67$). We dropped one item in order to increase internal consistency, resulting in a three-item measure ($\alpha = .84$). An example item was, "The job involves performing relatively simple tasks." Participants reported, on the same measure as in Study 1, the extent to which they had experienced happiness during the last six months, ranging from 1 (*not at all*) to 5 (*very much so*) ($\alpha = .89$). We measured gender with a single item. We measured organizational tenure with a single item reflecting the total number of years that employees had been affiliated with the organization.

Analytical Strategy

To account for the nested nature of our data (Bliese, 2000), we used random coefficient modeling techniques in the form of hierarchical linear modeling (HLM2; Raudenbush & Bryk, 2002). The data had a three-level structure in which individuals (level

1) are nested within teams (level 2), which in turn are nested within supervisors (level 3). Our level 1 (person-level) comprised variables varying across individuals. These included shame, happiness, expressive suppression, organizational tenure, task routine, gender, total creativity, incremental and radical creativity. Level 2 (team-level) included creative team environment as the only variable that varied across teams. Although we did not measure any level 3 variables (supervisor-level), this level served to control for the non-independence of teams nested within supervisors in all models.

We group-mean centered level 1 variables, and grand-mean centered level 2 variables across models (Enders & Tofighi, 2007).

Results

Table 4 contains means, standard deviations, and correlations of study variables. Consistent with the literature, radical and incremental creativity were substantially intercorrelated ($r = .75, p < .001$).

We performed various confirmatory factor analyses in order to establish discriminant validity among the study 2 measures. We tested a model with the seven independent factors—incremental creativity, radical creativity, creative team environment, happiness, shame, expressive suppression, and task routine—against various alternative but theoretically conceivable models. For the seven-factor model, this resulted in the following fit statistics: $\chi^2 = 271.22$ $df = 249$, $p = ns$, RMSEA = .02, CFI = .99. Overall, the results show that the seven-factor model provides a good model fit as well as a superior fit relative to the alternative models (compared to the six-factor model collapsing radical and incremental creativity, $\Delta\chi^2 = 136.88$, $df = 6$, $p < .001$). These analyses provide evidence that the perceptual measures we used have discriminant validity.

We examined whether significant variance in individual-level creativity resided between teams, which would require multi-level modeling (cf. Hofmann, 1997; Raudenbush

& Bryk, 2002). We therefore tested a one-way ANOVA (null) model where no predictors were entered at levels 2 (team-level) and 3 (leader-level). For radical creativity, 13% of the variance resided between teams. For incremental creativity, 12% of the variance resided between teams. These between-team variances indicate the need for multi-level modeling.

Hypotheses Testing

We specified study models according to established procedures (Hofmann, 1997; Raudenbush & Bryk, 2002; cf. Mathieu & Rapp, 2009). We specified a main effects model on total creativity to test Hypothesis 3 (Model 1, Table 5). This model included shame, expressive suppression, creative team environment, and the set of control variables.

Supporting Hypothesis 3, shame significantly predicted total creativity ($\gamma = .11, p < .01$).

Hypothesis 4 predicted that the relation between person-level shame, person-level expressive suppression, creative team environment, and individual creativity would be significant for total creativity. We specified a slopes-as-outcome model to test Hypothesis 4 (Model 2, Table 5). We first entered the control variables, the main effects (shame, expressive suppression, and creative team environment), and the three two-way interactions as combinations of the three main predictors. The final three-way interaction term was added in a final step to provide initial support for this hypothesis.

In support of Hypothesis 4, results (Model 2, Table 5) suggest that the interaction of person-level shame, expressive suppression, and creative team environment significantly predicted supervisor ratings of total creativity ($\gamma = .25, p < .05$). Further simple slopes analyses (Aiken & West, 1991) confirmed that the slope for shame and creativity was positive and significant for high levels of both expressive suppression and creative team environment ($\gamma = .45, t = 3.12, p < .01$). Thus, Hypothesis 4 was supported. No other slope was significant. Figure 3 depicts this interaction at high (mean +1 *SD*) and low (mean -1 *SD*) levels of expressive suppression and creative team environment (Aiken & West, 1991).

We specified a main effects model for each of the incremental and radical creativity measures to test Hypothesis 5 (Models 3 and 5, Table 5). This model included shame, expressive suppression, creative team environment, and the set of control variables. In support of Hypothesis 5, shame was significantly related to incremental creativity ($\gamma = .16, p < .01$). Contrary to Hypothesis 5, however, shame also significantly predicted radical creativity ($\gamma = .07, p < .05$). Further inspection of Table 5 suggests, however, that whereas the effect of shame on incremental creativity remains significant in an omnibus model comprising additional two- and three-way interaction terms ($\gamma = .19, p < .01$, Model 4), the effect of shame on radical creativity is no longer significant ($\gamma = .08, ns$, Model 6). These results show that the effect of shame on radical creativity is less robust (Aguinis, 2004, pp. 134-135). Overall, we therefore found mixed support for Hypothesis 5.

Hypothesis 6 proposed that the interaction of shame, expressive suppression, and creative team environment on individual creativity is significant for incremental creativity, but non-significant for radical creativity. We specified slopes-as-outcome models to test Hypothesis 6 with incremental (Model 4, Table 5) and radical creativity (Model 6, Table 5) as outcome variables. We first entered the control variables, the main effects (shame, expressive suppression, and creative team environment), and the three two-way interactions as combinations of the three predictor variables. The final three-way interaction term was added in a final step to provide initial support for this hypothesis.

In support of Hypothesis 6, this three-way interaction was significant for incremental creativity ($\gamma = .29, p < .01$), but not for radical creativity ($\gamma = .14, p = ns$). Additional simple slopes analyses (Aiken & West, 1991) revealed that, for incremental creativity, the slope for shame and creativity was positive and significant for high levels of both expressive suppression and creative team environment ($\gamma = .48, t = 2.81, p < .05$). Thus, Hypothesis 6 was supported. Although not hypothesized, the slope for low levels of both expressive

suppression and creative team environment was also positive and significant ($\gamma = .45, t = 3.57, p < .01$). Moreover the slope for low levels of expressive suppression and high levels of creative team environment was negative and significant ($\gamma = -.20, t = -2.59, p < .05$). Figure 4 depicts this interaction at high (mean +1 *SD*) and low (mean -1 *SD*) levels of expressive suppression and creative team environment (Aiken & West, 1991).

Discussion

The first objective of study 2 was to examine whether the hypothesized main and interactive effects of shame on creativity extend from day-to-day fluctuations in employee emotions and behaviors to more generalized emotions and behaviors at the person level. Whereas day-to-day fluctuations in shame as examined in study 1 did not predict creativity, the more generalized tendencies to experience shame in response to various situations as examined in study 2 predicted total creativity (Hypothesis 3). One interpretation for this finding would be that if shame is experienced more often over a longer period of time, these experiences may consolidate and therefore have a stronger impact on creativity than shame experiences that are more fleeting across days. Thus, a key boundary condition of the theory we advanced in this paper is that daily experiences of shame differ from more typical shame experiences in predicting creativity.

Conversely, the three-way interaction effect of shame, expressive suppression, and creative team environment (Hypothesis 4) generalized from the within-person to the person level. This suggests that the dynamics of shame and expressive suppression generalize from daily fluctuations to more typical shame experiences and emotion regulation tendencies.

The second aim of study 2 was to expand the scope of the contribution of this research by examining the main and interactive effects of shame on incremental versus radical creativity. In line with Hypothesis 5, shame had a positive main effect on incremental creativity; contrary to Hypothesis 5, shame also positively predicted radical creativity, albeit

this effect was not robust across models. These results suggest that the more certain and ‘safe’ nature of incremental creativity presents an opportunity for ashamed employees to restore their damaged self-image by assuming a limited and calculable risk. The inconclusive findings on radical creativity are hard to interpret and may require future research to resolve.

In full support of Hypothesis 6, the interactive effect of shame, expressive suppression, and creative team environment affected incremental but not radical creativity. These findings suggest that ashamed employees who expose themselves to creative team environments seize the opportunity to engage in incremental creativity as a secure means to restore their threatened self-image. In line with prior research (e.g., Madjar et al., 2011), this finding underlines the benefit of distinguishing between incremental and radical creativity. Prior research on negative affective experiences and creativity that returned inconclusive results (e.g., Amabile et al., 2005; Baas, De Dreu, & Nijstad, 2008; Davis, 2009) has not made this distinction, and therefore may have failed to detect differential results for incremental versus radical creativity.

Although studies 1 and 2 examined main and interactive effects of shame on creativity with different samples, designs, conceptualizations of shame and expressive suppression, and alternative creativity measures, these studies have not empirically examined the underlying motivational mechanisms conveying the effect of shame on creativity. Specifically, providing empirical evidence for restore motivation as one central mediating process would testify to the validity of the theoretical rationale assumed in studies 1 and 2 regarding the mechanisms that underlie the shame-creativity relation.

Study 3

The objective of study 3 is to expand the scope of the contribution of this research by developing and testing a new set of hypotheses regarding restore motivation as a central causal mechanism driving the main and interactive effects of shame on creativity. We have

argued previously that the key role of expressive suppression with respect to the shame-creativity relation is to expose ashamed individuals to creative team environments. Because experimental manipulation in study 3 allows us to expose participants directly to creative team environments, we dropped expressive suppression from the study design.

Restore Motivation as a Central Mediating Mechanism

As argued previously, shame experiences motivate behavior to restore a positive view of the self (De Hooge et al., 2010). The motivation to restore the damaged self-image of ashamed individuals likely requires deviating from previous behavior in ways that others evaluate as different but positive. Coming up with ideas that are novel and useful may therefore present a suitable measure for ashamed individuals to restore their positive self-image. Thus, we expect shame to trigger the motivation to restore individuals' positive self-image, which in turn should spur creativity.

Hypothesis 7. Shame has a main effect on restore motivation. That is, ashamed individuals will report higher levels of restore motivation than will those in a neutral emotional state.

Hypothesis 8. Shame has a main effect on creativity. That is, ashamed individuals will report higher levels of creativity than will those in a neutral emotional state.

Hypothesis 9. Restore motivation mediates the effect of shame on creativity.

Although we expect shame to affect creativity via restore motivation, this may be the case to a lesser extent if individuals work in social environments that do not support creativity. Prior research suggests that shame experiences may result in approach behaviors in order to restore the threatened self, but may also trigger withdrawal behaviors to protect the self from further damage if restoration is perceived as risky or impossible (De Hooge et al., 2010). The extent to which shame triggers restore motivation may therefore also depend on

contextual variables. Because creative team environments encourage people to try new things even if they might not work, such environments reduce perceptions of risk and uncertainty, which in turn may increase restore motivation for ashamed individuals.

Hypothesis 10. Shame positively predicts restore motivation if individuals are exposed to creative team environments. That is, ashamed individuals exposed to creative team environments will report higher levels of restore motivation than will those not exposed to creative team environments.

As argued previously, if individuals are exposed to creative team environments, creativity is flagged as desirable. Creative behavior may therefore serve to restore the positive self-image of individuals experiencing shame. For example, if an individual feels ashamed because of a public reprimand due to a serious mistake in a presentation, exposure to a creative team environment will signal to this individual that creativity is an appropriate way to restore the damaged self-image. We therefore expect that exposure to a creative team environment spurs the creativity of ashamed individuals.

Hypothesis 11. Shame positively predicts creativity if individuals are exposed to creative team environments. That is, ashamed individuals exposed to creative team environments will report higher levels of creativity than will those not exposed to creative team environments.

The motivation of ashamed individuals to restore their positive self-image triggers behavior that meets contextual expectations (De Hooge et al., 2010, 2011). If individuals are exposed to creative team environments, the contextual expectation is to be creative. Therefore, restore motivation should also mediate the interactive effect of shame and exposure to creative team environment.

Hypothesis 12. Restore motivation mediates the interactive effect of shame and exposure to creative team environment on creativity.

Method

Sample and Procedure

147 business students from a European business school participated in the study. Average age was 20.9 years ($SD = 2.38$), average work experience was 1.45 years, and 56% were female. The sample comprised 26 nationalities, with French (58%) and Moroccan (10%) accounting for the majority. All students were fluent in English. Seven participants were excluded from the analyses as the manipulation check of shame indicated that the manipulation had not worked in their particular cases. Additionally, one participant was dropped from the analyses because his answers were unrelated to the task.

The study had a 2 [shame vs. control] X 2 [creative team environment high vs. low] experimental design, and was carried out during class time. At the beginning of the session, participants were told that the experiment was voluntary, and were given the opportunity to leave the classroom if they were not interested in participating. All students accepted the invitation and decided to take part in the experiment. Participants were then randomly assigned to one of the four experimental conditions. All of our instructions, manipulations and tasks were included in a booklet that was provided to participants. Participants first read a brief scenario adapted from De Hooge et al. (2010), asking them to imagine they work for an advertising company and gave a presentation to their team. They then read that their presentation went completely wrong (shame condition) or as usual (control), after which they completed the manipulation check for shame. After this, participants read a description of their team as encouraging creativity (creative team environment high) or rather encouraging conventional behavior (creative team environment low). Subsequently, participants completed a short survey assessing restore motivation, protect motivation, as well the manipulation check for creative team environment. Thereafter, participants were given a client description and a further written instruction that they were to give a second

presentation to their team, and to this end should now engage in the development of ideas for a slogan for this client (creativity task). A final survey assessing demographics and sample characteristics concluded the study. Pre-testing of task materials and manipulations by three subject matter experts, as well as with a different sample of 50 students who did not participate in the main study, suggested that the instructions were clear and no further amendments were necessary.

Manipulations and Measures

Manipulation of shame. To induce shame, we used an adaptation of the scenario used by De Hooge et al. (2010) for a business student population. We wanted to model tasks that require creativity comparable to work settings. To this end, our manipulation included references to the specific creativity requirements for the task.

All participants were given the following text: “Imagine you work for an advertising firm. Your team holds weekly meetings where new projects are discussed. A new customer requested a proposal for an advertisement slogan, and everyone in your team has to prepare a first proposal. Given the importance of the customer for your company, it is fundamental that the final proposal is attractive and original, as your firm will be competing with other advertising firms to get the deal. In the meeting all of your team colleagues are present.”

The text continued for each condition as follows. Shame: “When giving your presentation everything goes completely wrong. You stumble over your own words, your story is muddled, and at the end it is clear that nobody understood what you were talking about. Once your presentation is complete, some of your colleagues ask you questions. Then it becomes clear that you had not prepared your presentation at all.” Control: “When giving your presentation everything goes as planned. You present your first set of ideas for the advertisement slogan. Once your presentation is complete, some of your colleagues ask you questions about some of your ideas. Your presentation went as usual.”

Upon completion of this part of the study, participants completed the manipulation check for shame.

Manipulation of creative team environment. Participants then read: “At the end of the meeting, your team decides that everyone will work on a new set of ideas for the slogan and present them during next week’s meeting. Please consider whether you want to do this. On the one hand, this is a second chance to give a good presentation. On the other hand, it could also go wrong.”

High creative team environment: “You start thinking of a new proposal to present to your colleagues next week. One of the most prominent characteristics of your team is that you always encourage each other to engage in creative activities whenever possible. In your team, your colleagues are usually willing to try new ideas—even if they end up not working.”

Low creative team environment: “You start thinking of a new proposal to present to your colleagues next week. One of the most prominent characteristics of your team is that you never encourage each other to engage in creative activities. In your team, your colleagues are usually not willing to try new ideas—least of all those that may end up not working.”

After the conclusion of this part of the study, we ask participants to complete a questionnaire containing the manipulation check for creative team environment, as well as the restore and protect motivation scales.

Restore motivation. We measured restore motivation with the scale developed by De Hooze et al. (2010). The measure comprises five items on a 7-point scale ranging from 1 (*not at all*) to 7 (*very strongly*), concerning the motivation underlying their work on the new set of ideas for the slogan. A sample item is, “(When you start working on the second set of ideas for the slogan, you want to:) Improve my self-image” ($\alpha = .77$).

Protect motivation. Previous studies (De Hooze et al., 2010, 2011) suggested that protect motivation may also follow shame experiences. We thus controlled for protect

motivation using the scale developed by De Hooge et al. (2010), which comprises five items on a 7-point scale ranging from 1 (*not at all*) to 7 (*very strongly*). A sample item is, “(When you start working on the second set of ideas for the slogan, you want to:) Avoid more damage to my self-image” ($\alpha = .81$).

Creativity. Upon completion of this survey, we asked participants to engage in the creativity task. Participants read: “Please write down your ideas for the advertisement slogan, keeping in mind that you have to present them to your colleagues. The customer you are working for is a company that specializes in organizing events. This customer organizes the New Rocky Summer Festival that will have its third opening this August in [name of city suppressed]. The idea of the festival is to give new music bands an opportunity to perform for a big audience, and to select the most promising bands for further promotion. The first two openings of the festival took place in other European cities and have so far been a huge success. The slogan must be creative and original, but at the same time it should be meaningful and useful. Write down as many ideas as you can think of for a slogan for this customer.”

Creativity was rated by two coders, professors of management, who were naive to the research questions of interest, and not involved in this study. In line with previous studies, we defined creativity as ideas that were both novel and useful (Amabile, 1986; Baer, Leenders, Oldham, & Vadera, 2010; Baer & Oldham, 2006). We instructed the coders to rate the level of originality and usefulness of each slogan from 1 (*not at all creative*) to 5 (*extremely creative*). We examined interrater agreement via intraclass correlation coefficients. Results suggested acceptable levels of interrater reliability for originality (ICC[2,2] = .93) as well as for usefulness (ICC [2,2] = .64; Bliese, 2000). We then averaged originality and usefulness scores to form the overall creativity measure.

Analysis and Results

Manipulation Checks

To assess the efficacy of the shame manipulation, we measured shame with the same scale used in studies 1 and 2, on a five-point scale ranging from 1 (*not at all*) to 5 (*very much so*). Cronbach's alpha was .91. The manipulation check indicated that participants in the shame condition reported significantly more shame ($M = 3.74, SD = .72$) than participants in the control condition ($M = 1.79, SD = .71; t(137) = 15.95, p < .001$).

To measure the efficacy of the creative team environment manipulation, we measured creative team environment with the three-item measure developed by Gilson et al. (2005) that was used in the studies 1 and 2, on a 7-point scale ranging from 1 (*not at all*) to 7 (*completely*). Cronbach's alpha was .93. Participants in the high creative team environment condition reported significantly higher levels of creative team environment ($M = 6.05, SD = .73$) than participants in the low creative team environment condition ($M = 3.68, SD = 2.03; t(137) = 9.15, p < .001$).

Hypotheses Testing

Table 6 presents the means of restore motivation and creativity for each experimental cell. Hypothesis 7 predicted a main effect of shame on restore motivation. A one-way Analysis of Variance (ANOVA) confirmed this hypothesis ($F(1,137) = 10.18, p < .01$, partial $\eta^2 = .07$). Participants in the shame condition reported higher levels of restore motivation ($M = 5.62, SD = .98$) than participants in the control condition ($M = 5.11, SD = .89$).

Hypothesis 8 predicted a main effect of shame on creativity. A one-way ANOVA confirmed this hypothesis ($F(1,137) = 18.77, p < .01$, partial $\eta^2 = .12$). Participants in the shame condition reported higher levels of creativity ($M = 2.50, SD = .36$) than participants in the control condition ($M = 2.23, SD = .36$).

In order to test whether the main effect of shame on creativity is mediated by restore motivation (Hypothesis 9), we applied the procedure developed by Preacher and Hayes

(2008) and calculated bias-corrected bootstrap confidence intervals (with 1,000 bootstrap samples) for the indirect effect of shame on creativity via restore motivation, additionally controlling for protect motivation. For the indirect effect of shame, the lower bound of the 95% bias-corrected confidence interval was .0001, and the upper bound was .0082 (Table 7). In support of Hypothesis 9, these results indicate a significant indirect effect of shame on creativity via restore motivation.

To test whether shame positively predicts restore motivation if individuals are exposed to creative team environments (Hypothesis 10), we performed a univariate ANOVA in which restore motivation was entered as dependent variable. The interaction of shame and creative team environment was significant ($F(1,135) = 8.97, p < .01, \text{partial } \eta^2 = .06$), thus confirming Hypothesis 10.

In order to test Hypothesis 11, we performed a univariate ANOVA in which creativity was entered as dependent variable. In support of Hypothesis 11, we found that the interaction of shame and creative team environment was significant ($F(1,135) = 14.09, p < .01, \text{partial } \eta^2 = .09$), thus confirming Hypothesis 11.

In order to test whether the interactive effect of shame and creative team environment on creativity is mediated by restore motivation (Hypothesis 12), we calculated bias-corrected bootstrap confidence intervals (with 1,000 bootstrap samples) for the indirect effect of shame X creative team environment on creativity via restore motivation, additionally controlling for protect motivation (Preacher & Hayes, 2008). For the indirect effect of shame X creative team environment, the lower bound of the 95% bias-corrected confidence interval was .0001, and the upper bound was .0014 (Table 8). In support of Hypothesis 12, these findings suggest a significant indirect effect of shame X creative team environment on creativity via restore motivation.

Discussion

Study 3 provided support for restore motivation as one central mediating process that conveys the main and interactive effects of shame on creativity. These results shed initial light on the processes through which shame affects creativity, thereby validating the theoretical mechanisms that were expected (but not examined) in studies 1 and 2.

These findings similarly contribute to prior literature on the mediating processes conveying shame experiences on various outcomes other than creativity (e.g., de Hooge et al., 2010). Building on these previous studies, the findings of study 3 corroborate the idea that restore motivation is a central motivational mechanism that also conveys the effects of shame on creativity.

General Discussion

Negative emotional experiences can have profound and long-lasting effects on employees (Dasborough, 2006; Elfenbein, 2007). We argued in this paper that shame is an emotion with creative potential, because the generation of novel and useful ideas serves to restore the damaged self-image of ashamed employees. Across studies, results partially supported the hypothesis that shame has a direct effect on creativity. Conversely, we found consistent support for the idea that ashamed employees engage in creativity if employees are exposed to a proximal work team that stimulates and encourages creativity. These interactive effects of shame and creative team environment on creativity extended from day-to-day emotions and behaviors (study 1) to more typical shame experiences and more generic emotion regulation tendencies that vary across individuals (study 2). Moreover, the interactive effect of shame and exposure to creative team environment was found for incremental but not radical creativity. Finally, we provided experimental evidence that restore motivation mediated the main and interactive effects of shame on creativity. These findings contribute to theory and research on shame and creativity in various ways.

Theoretical Contributions

Shame has traditionally been regarded as a negative and powerful emotion with undesirable consequences (Lazarus & Folkman, 1984; Leary & Kowalsky, 1995; Tangney et al., 1996). Although commonly experienced in the workplace (Bagozzi et al., 2003), its social functions are still somewhat unclear (De Hooge et al., 2008). Based on the functionalist perspective of emotions (e.g., Keltner & Gross, 2009), more recent research has started to explore the conditions under which shame may result in beneficial outcomes for the individual and the community (e.g., Bagozzi et al., 2003; De Hooge et al., 2011). This paper contributes to this perspective by adding creativity as an important beneficial outcome of shame. It thereby enhances our understanding of the social functions of shame.

In line with this prior work, the three studies presented in this paper showed mixed support for the idea that shame affects creativity directly, with stronger support provided by experimental than field data. In light of these inconclusive findings, we suggest that a contingency perspective examining shame within its social context presents a more compelling approach to understand how shame affects creativity. Application of this perspective suggests that although shame is an emotion with creative potential, full exploitation of that potential necessitates that certain contextual conditions—in this research, exposure to creative team environments—are in place.

In switching the focus to the affect-creativity literature, our study testifies to the value of examining discrete negative emotions (in addition to more general moods) in order to elucidate the hitherto unclear relationship between negative affect and creativity (Amabile et al., 2005; Baas et al., 2008; Davis, 2009). Future studies may examine the creative potential of alternative discrete emotions with particular characteristics. One candidate with relevance for the work place is frustration. Frustrating experiences not only occur frequently in organizational settings (Basch & Fisher, 2000), but are also characterized by an orientation to approach rather than avoid problems (Baas et al., 2008). Therefore, frustrating experiences

might trigger creative activity in order to resolve the situation that causes frustration (Amabile et al., 2005).

A further contribution of our research to the creativity field concerns the differential effects for incremental versus radical creativity. Recent research has identified differential predictors of either creativity type (Baer, 2010; Gilson & Madjar, 2011; Gilson et al., 2012; Madjar et al., 2011). We add to this work the finding that affective experiences may differentially predict different types of creative activity. In order to further elucidate the negative affect-creativity relationship, future studies should preserve the distinction between radical versus incremental creativity. In this regard, a direct extension of our work might be to examine whether other negative emotions with associated approach tendencies and high activation levels (such as anger or frustration; Baas et al., 2008) might trigger the development of radically novel ideas.

Our work similarly contributes to the growing body of research on cross-level influences on creativity (e.g., Hirst et al., 2009). From this interactionist perspective (Zhou & Hoever, 2014), shame represents an emotion that is both expressed within and shaped by characteristics of the team context. Thus, at a more general level, our findings are also compatible with a person-in-situation perspective (cf. Chen & Kanfer, 2006) that views the more complex interplay of individuals within their team context in order to understand the creative expression of shame. Contextual influences are not limited to the immediate team context, and aspects of the organizational context related to the supervisor (George & Zhou, 2007), organizational-level climates (West & Richter, 2008), or organizational structure and technology (Woodman, Sawyer, & Griffin, 1993), may similarly shape the shame-creativity relationship, and therefore represent viable extensions to our work.

Beyond examination of the conditions under which shame predicts creativity, we also examined restore motivation as one central theoretical mechanism conveying the effect of

shame on creativity. In direct extension of prior research (De Hooge et al., 2010, 2011), we showed that restore motivation mediated the effect of shame on creativity. Additionally, we also showed that restore motivation mediated the interactive effect of shame on creativity. Thus, our work provides substantive support for the view that restore motivation is one central mechanism linking shame experiences to creativity. Future studies may extend this research by examining other processes that convey the effects of shame, as well as examine whether restore motivation mediates the effects of shame on alternative employee outcomes such as organizational citizenship or proactive behavior.

In zooming in on the role and function of expressive suppression, our findings from studies 1 and 2 provide supporting evidence for the idea that contextually sensitive expressive suppression can return desirable personal outcomes (Butler & Gross, 2004; Kennedy-Moore & Watson, 2001)—in this case creativity. This finding stands out among the bulk of research that has identified numerous personal and social *costs* resulting from expressive suppression (e.g., Butler et al., 2003; Gross, 1998a, 1998b; Richards & Gross, 2000). Most of these studies, however, have not focused on the various social contexts in which emotional displays are suppressed. Future research may therefore examine the benefits of expressive suppression in varying social contexts in order to provide a more exhaustive and complete picture of its positive consequences (Butler & Gross, 2009).

Practical Implications

The key finding that shame can trigger creativity if its regulation is aligned with the social context provides useful advice to managers and employees alike. We do not advocate that managers shame their employees. Rather, shame may occur unavoidably and on a regular basis if employees work in social contexts, and therefore requires efficient management and self-regulation strategies. One implication of our research is that managers and employees should be aware that even seemingly destructive negative emotions bear creative potential.

Although the occurrence of shame may be somewhat uncontrollable, its management is not, and the social regulation perspective advanced in this paper stresses that managers and employees can turn seemingly negative energy into novel and useful ideas.

Because the regulation of shame is under the control of employees and managers, they can assume an active role in managing these emotional dynamics for enhanced creativity. Although managers should invest in creating team environments that encourage creativity, our findings suggest this will not be enough. Rather, managers interested in promoting creativity should additionally invest in coaching or training employees with regard to the regulation of shame. Such interventions may include emotional awareness training and focus on the role of suppression of certain emotional displays in order to facilitate social relationships within teams.

Limitations and Directions for Future Research

Our research bears some limitations worth highlighting. First, although study 1 combined self-report and supervisor rated creativity, both measures were not significantly correlated ($r = .12$; $p = ns$)—a finding at odds with the extant creativity literature (cf. Amabile & Mueller, 2008). Despite having administered the same extensively used and validated creativity measure (Zhou & George, 2001), our findings suggest the two measures captured different facets of creative activity (Amabile & Mueller, 2008). Whereas factors such as ‘perceived probability of successfully bringing ideas to supervisor’s attention’ (Randel et al., 2011) may affect managerial creativity ratings, self-report measures of creativity likely capture different facets of the broader creativity construct. For instance, Beghetto and Kaufman (2007) suggested the term ‘mini-c’ creativity to capture a form of ‘personal creativity’ (Runco, 2004), in which the novelty and usefulness of what is creative does not need to be original or useful *to others*—but rather to oneself. This form of creativity is particularly relevant for the development of understanding and personal knowledge

construction (Beghetto & Kaufman, 2007). Future research may nonetheless explicitly examine the differential meanings of self-report versus supervisor rated creativity (Amabile & Mueller, 2008).

Second, although we measured the extent to which employees experienced shame in studies 1 and 2, we did not measure the causes that elicited shame. One could speculate that shame elicited through interactions with employees' proximal work team may have more severe consequences for work that is enacted in cooperation with team colleagues. Future research is therefore needed to examine the causes of shame for creativity in work contexts.

Third, our research question dealt directly with the relationship between shame and creativity and the conditions that make this link positive. However, we did not examine whether ashamed employees who suppressed their shame are more or less creative than unashamed employees. Study 3 provides experimental evidence that shame fosters creativity ($M = 2.50, SD = .36$) more than a neutral emotional state ($M = 2.23, SD = .36; t(137) = 4.33, p < .001$). However, more research is needed to investigate if expressive suppression of shame benefits individuals and organizations in terms of creativity to a greater extent than neutral emotional states.

Finally, we responded to the call for creativity research in non-Western countries (Zhou & Shalley, 2008) by testing our hypotheses with two samples of Colombian employees in studies 1 and 2. Thus, we presented, to our knowledge, the first study examining affect and creativity in South America. We adopted a culturally sensitive but theory-driven approach (Brewer, 2006) to the study of creativity, thereby allowing comparability with the existing body of creativity research from Western societies. This approach, however, requires further considerations with respect to the generalizability of study findings to other cultures (cf. Cheng, 1994). In particular, differences between Colombia and the US regarding collectivism versus individualism may have implications for norms and habits regarding the expression of

shame (cf. Mesquita & Frijda, 1992). Employees of collectivist cultures such as Colombia may direct their attention more towards others in an attempt to adhere to social norms and meet social expectations (Triandis & Suh, 2002). Hence, the suppression of shame displays could have more strongly aimed at preserving social relationships in our sample than this would be the case in more individualist cultures such as the US (Bagozzi et al., 2003). Thus, future studies may replicate the findings reported here in Western societies.

Conclusion

The key finding of this research is that shame, an unpleasant and commonly experienced emotion (Bagozzi et al., 2003; De Hooze et al., 2008), can spur employee creativity, provided that ashamed employees are exposed to creative team environments. This finding holds for incremental but not radical creativity, and is partially triggered by the motivation of ashamed employees to restore their positive self-image. This paper thus contributes to our understanding of shame, organizational creativity, and the benefits of exposure to creative team environments.

References

- Agrawal, N., Han, D., & Duhachek, A. (2013). Emotional agency appraisals influence responses to preference inconsistent information. *Organizational Behavior and Human Decision Processes*, *1*, 87–97.
- Aguinis, H. (2004). *Regression analysis for categorical moderators*. New York: Guilford Press.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, London: Sage.
- Alreck, P. L., & Settle, R. B. (2003). *The survey research handbook*. New York: Irwin.
- Amabile, T. M. (1988). A model of creativity and innovation in organizations. In B. M. Staw, & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 10, pp. 123–167). Greenwich, CT: JAI Press.
- Amabile, T. M. (1996). *Creativity in context*. Boulder, CO: Westview.
- Amabile, T. M., Barsade, S. G., Mueller, J. S., & Staw, B. M. (2005). Affect and creativity at work. *Administrative Science Quarterly*, *50*, 367–403.
- Amabile, T. M., & Mueller, J. S. (2008). Assessing creativity and its antecedents: An exploration of the componential theory of creativity. In J. Zhou & C. E. Shalley (Eds.), *Handbook of organizational creativity* (pp. 33–64). New York: Erlbaum.
- Ashforth, B. E., & Humphrey, R. H. (1995). Emotion in the workplace: A reappraisal. *Human Relations*, *48*, 97–125.
- Baas, M., De Dreu, C. K. W., & Nijstad, B. A. (2008). A meta-analysis of 25 years of mood–creativity research: Hedonic tone, activation, or regulatory focus? *Psychological Bulletin*, *134*, 779–806.
- Baer, M. (2010). The strength-of-weak-ties perspective on creativity: A comprehensive examination and extension. *Journal of Applied Psychology*, *95*, 592–601.

- Baer, M. (2012). Putting creativity to work: The implementation of creative ideas in organizations. *Academy of Management Journal*, *55*, 1102–1119.
- Baer, M., Leenders, R. TH. A. J., Oldham, G. R., & Vadera, A. K. (2010). Win or lose the battle for creativity: The power and perils of intergroup competition. *Academy of Management Journal*, *53*, 827–845.
- Baer, M., & Oldham, G. R. (2006). The curvilinear relation between experienced creative time pressure and creativity: The moderating effects of openness to experience and support for creativity. *Journal of Applied Psychology*, *91*, 963–970.
- Bagozzi, R. P., Verbeke, W., & Gavino, J. C. J. (2003). Culture moderates the self-regulation of shame and its effects on performance: The case of salespersons in the Netherlands and the Philippines. *Journal of Applied Psychology*, *88*, 219–233.
- Basch, J., & Fisher, C. D. (2000). Affective events-emotion matrix: A classification of work events and associated emotions. In N. M. Ashkanasy, C. E. J. Härtel, & W. Zerbe (Eds.), *Emotions in the workplace: Research, theory, and practice* (pp. 36–48). Westport: Quorum Books.
- Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego-depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology*, *74*, 1252–1265.
- Beghetto, R. A., & Kaufman, J. C. (2007). Toward a broader conception of creativity: A case for mini-c creativity. *Psychology of Aesthetics, Creativity, and the Arts*, *1*, 73-79.
- Behrendt, H., & Ben-Ari, R. (2012). The positive side of negative emotion: The role of guilt and shame in coping with interpersonal conflict. *Journal of Conflict Resolution*, *56*, 1116–1138.

- Binnewies, C., & Wörnlein, S. C. (2011). What makes a creative day? A diary study on the interplay between affect, job stressors, and job control. *Journal of Organizational Behavior, 32*, 589–607.
- Bledow, R., Rosing, K., & Frese, M. (2013). A dynamic perspective on affect and creativity. *Academy of Management Journal, 56*, 432–450.
- Bliese, P. D. (2000). Within group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations* (pp. 349–381). San Francisco, CA: Jossey Bass.
- Bono, J. E., Foldes, H. J., Vinson, G., & Muros, J. P. (2007). Workplace emotions: The role of supervisors and leadership. *Journal of Applied Psychology, 92*, 1357–1367.
- Borrill, C., West, M. A., Shapiro, D., & Rees, A. (2000). Team working and effectiveness in health care. *British Journal of Health Care, 6*, 364–371.
- Brewer, M. B. (2006). Bringing culture to the table. In E. A. Mannix, M. A. Neale (Series Ed.) & Y. Chen (Ed.), *Research on managing groups and teams* (Vol. 9, pp. 353–365). Oxford: Elsevier Science.
- Brislin, R. W. (1980). Translation and content analysis of oral and written material. In H. C. Triandis & J. W. Berry (Eds.), *Handbook of crosscultural psychology* (Vol. 2, pp. 389–444). Boston: Allyn & Bacon.
- Brown, R., González, R., Zagefka, H., Manzi, J., & Čehajić, S. (2008). Nuestra culpa: Collective guilt and shame as predictors of reparation for historical wrongdoing. *Journal of Applied Psychology, 94*, 75–90.
- Butler, E. A., Egloff, B., Wilhelm, F. H., Smith, N. C., Erickson, E. A., & Gross, J. J. (2003). The social consequences of expressive suppression. *Emotion, 3*, 48–67.

- Butler, E. A., & Gross, J. J. (2004). Hiding feelings in social contexts: Out of sight is not out of mind. In P. Philippot & R. S. Feldman (Eds.), *The regulation of emotion* (pp. 101–126). Mahwah, NJ: Erlbaum.
- Butler, E. A., & Gross, J. J. (2009). Emotion and emotion regulation: Integrating individual and social levels of analysis. *Emotion Review*, *1*, 86–87.
- Cattani, G., & Ferriani, S. (2008). A core/periphery perspective on individual creative performance: Social networks and cinematic achievements in the Hollywood film industry. *Organization Science*, *19*, 824–844.
- Chen, G., & Kanfer, R. (2006). Toward a systems theory of motivated behavior in teams. In B. M. Staw (Ed.), *Research in organizational behavior* (Vol. 27, pp. 223–267). Greenwich, CT: JAI Press.
- Cheng, J. (1994). Notes: On the concept of universal knowledge in organizational science: Implications for cross-national research. *Management Science*, *40*, 162–168.
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis for field settings*. Chicago, Illinois: Rand McNally.
- Dasborough, M. T. (2006). Cognitive asymmetry in employee emotional reactions to leadership behaviors. *Leadership Quarterly*, *17*, 163–178.
- Davis, M. A. (2009). Understanding the relationship between moods and creativity: A meta-analysis. *Organizational Behavior and Human Decision Processes*, *108*, 25–38.
- Dawson, J. F. (2003). Do we have enough? The accuracy of incomplete data from small groups. *Academy of Management Best Paper Proceedings*.
- De Hooge, I. E., Breugelmans, S. M., & Zeelenberg, M. (2008). Not so ugly after all: When shame acts as a commitment device. *Journal of Personality and Social Psychology*, *95*, 933–943.

- De Hooge, I. E., Zeelenberg, M., & Breugelmans, S. M. (2010). Restore and protect motivations following shame. *Cognition and Emotion, 24*, 111–127.
- De Hooge, I. E., Zeelenberg, M., & Breugelmans, S. M. (2011). A functionalist account of shame-induced behaviour. *Cognition and Emotion, 25*, 939–946.
- DeWall, C. N., Baumeister, R. F., Mead, N. L., & Vohs, K. D. (2011). How leaders self-regulate their task performance: Evidence that power promotes diligence, depletion, and disdain. *Journal of Personality and Social Psychology, 100*, 47–65.
- Elfenbein, H. A. (2007). Emotion in Organizations: A review and theoretical integration, *Academy of Management Annals, 1*, 315–386.
- Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods, 12*, 121–138.
- Ferguson, T. J. (2005). Mapping shame and its functions in relationships. *Child Maltreatment, 10*, 377–386.
- Fischer, K. W., & Tangney, J. P. (1995). Self-conscious emotions and the affect revolution: Framework and overview. In J. P. Tangney & K. W. Fischer (Eds.), *Self-conscious emotions* (pp. 3–24). New York: Guilford Press.
- Frank, R. H. (1988). *Passions within reason* (pp. 99-102). New York: Norton.
- Frijda, N. H. (1986). *The emotions*. New York: Cambridge University Press.
- Frijda, N. H. (1993). Moods, emotion episodes and emotions. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 381–403). New York: Guilford Press.
- Frijda, N. H., Kuipers, P., & ter Schure, E. (1989). Relations among emotion, appraisal, and emotional action readiness. *Journal of Personality and Social Psychology, 57*, 212–228.
- George, J. M. (2007). Creativity in organizations. *Academy of Management Annals, 1*, 439–477.

- George, J. M., & Zhou, J. (2007). Dual tuning in a supportive context: Joint contributions in a positive mood, negative mood, and supervisory behaviors to employee creativity. *Academy of Management Journal*, 50, 605–622.
- Ghorbani, M., Liao, Y., Çayköylü, S., & Chand, M. (2013). Guilt, shame, and reparative behavior: The effect of psychological proximity. *Journal of Business Ethics*, 114, 311–324.
- Gilbert, P. (1997). The evolution of social attractiveness and its role in shame, humiliation, guilt and therapy. *British Journal of Medical Psychology*, 70, 113–147.
- Gilson, L. L., Lim, H. S., D'Innocenzo, L., & Moye, N. (2012). One size does not fit all: Managing radical and incremental creativity. *Journal of Creative Behavior*, 46, 168–191.
- Gilson, L. L., & Madjar, N. (2011). Radical and incremental creativity: Antecedents and processes. *Psychology of Aesthetics, Creativity, and the Arts*, 5, 21–28.
- Gilson, L. L., Mathieu, J. E., Shalley, C. E., & Ruddy, T. M. (2005). Creativity and standardization: Complementary or conflicting drivers of team effectiveness? *Academy of Management Journal*, 48, 521–531.
- Gilson, L. L., & Shalley, C. E. (2004). A little creativity goes a long way: An examination of teams' engagement in creative processes. *Journal of Management*, 30, 453–470.
- Goodman, J. S., & Blum, T. C. (1996). Assessing the non-random sampling effects of subject attrition in longitudinal research. *Journal of Management*, 22, 627–652.
- Grandey, A. A., Dicter, D. N., & Sin, H. P. (2004). The customer is *not* always right: Customer aggression and emotion regulation of service employees. *Journal of Organizational Behavior*, 25, 1–22.

- Gross, J. J. (1998a). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology, 74*, 224–237.
- Gross, J. J. (1998b). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 23*, 271–299.
- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology, 39*, 281–291.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*, 348–362.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*, 319–340.
- Hirst, G., van Knippenberg, D., & Zhou, J. (2009). A cross-level perspective on employee creativity: Goal orientation, team learning behaviour, and individual creativity. *Academy of Management Journal, 52*, 280–293.
- Hirst, G., van Knippenberg, D., Chen, C., & Sacramento, C. (2011). How does bureaucracy impact on individual creativity? A cross-level investigation of team contextual influences on goal orientation-creativity relationships. *Academy of Management Journal, 54*, 624–641.
- Hofmann, D. A. (1997). An overview of the logic and rationale of hierarchical linear models. *Journal of Management, 23*, 723–744.
- Hofmann, D. A., & Gavin, M. B. (1998). Centering decisions in hierarchical linear models: Implications for research in organizations. *Journal of Management, 23*, 723–744.
- Hox, J. J. (2002). *Multilevel analysis: Techniques and applications*, Hillsdale, NJ: Lawrence Erlbaum.

- Ilies, R., Wilson, K.S., & Wagner, D. T. (2009). The spillover of daily job satisfaction onto employees' family lives: The facilitating role of work-family integration. *Academy of Management Journal*, *52*, 87–102.
- James, L. R. (1982). Aggregation bias in estimates of perceptual agreement. *Journal of Applied Psychology*, *67*, 219–229.
- James, L. R., Demaree, R. B., & Wolf, G. (1984). Estimating within group interrater reliability with and without response bias. *Journal of Applied Psychology*, *69*, 8–98.
- Jehn, K. A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly*, *40*, 256–282.
- Keltner, D., & Gross, J. J. (1999). Functional accounts of emotions. *Cognition and Emotion*, *13*, 467–480.
- Keltner, D., & Haidt, J. (1999). Social functions of emotions at four levels of analysis. *Cognition and Emotion*, *13*, 505–521.
- Kennedy-Moore, E., & Watson, J.C. (2001). How and when does emotional expression help? *Review of General Psychology*, *5*, 187–212.
- Klein, K. J., Bliese, P. D., Kozlowski, S. W. J., Dansereau, F., Gavin, M. B., Griffin, M. A., Hofmann, D. A., James, L. R., Yammarino, F. J., & Bligh, M. C. (2000). Multilevel Analytical Techniques: Commonalities, differences, and continuing questions. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations* (pp. 512–556). San Francisco, CA: Jossey Bass.
- Klein, K. J., & Kozlowski, S. W. J. (2000). *Multilevel theory, research, and methods in organizations*. San Francisco, CA: Jossey Bass.
- Kozlowski, S. W. J., & Bell, B. S. (2003). Work groups and teams in organizations. In W. C. Borman, D. R. Ilgen, & R. J. Klimoski (Eds.), *Handbook of psychology: Industrial and organizational psychology* (Vol. 12, pp. 333–375). London: Wiley.

- Lam, C. K., Huang, X., & Janssen, O. (2010). Contextualizing emotional exhaustion and positive emotional display: The signaling effects of supervisors' emotional exhaustion and service climate. *Journal of Applied Psychology, 95*, 368–376.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Leary, M. R., & Kowalsky, R. M. (1995). *Social anxiety*. New York: Guilford Press.
- LeBreton, J. M., & Senter, J. L. (2008). Answers to 20 questions about interrater reliability and interrater agreement. *Organizational Research Methods, 11*, 815–852.
- Lewis, M. (1992). *Shame: The exposed self*. New York: Free Press.
- Madjar, N., Greenberg, E., & Chen, Z. (2011). Factors for radical creativity, incremental creativity, and routine, noncreative performance. *Journal of Applied Psychology, 96*, 730–743.
- Mathieu, J. E., & Rapp, T. L. (2009). Laying the foundation for successful team performance trajectories: The roles of team charters and performance strategies. *Journal of Applied Psychology, 94*, 90–103.
- Mesquita, B., & Frijda, N. H. (1992). Cultural variations in emotions: A review. *Psychological Bulletin, 112*, 179–204.
- Mischel, W. (1977). The interaction of person and situation. In D. Magnusson & N. S. Endler (Eds.), *Personality at the crossroads: Current issues in interactional psychology* (pp. 333–352). Hillsdale, NJ: Erlbaum.
- Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology, 91*, 1321–1339.
- Mumford, M. D., & Gustafson, S. B. (1988). Creativity syndrome: Integration, application, and innovation. *Psychological Bulletin, 103*, 27–43.

- Oathes, D. J., Siegle, G. J., & Ray, W. J. (2011). Chronic worry and temporal dynamics of emotional processing. *Emotion, 11*, 101–114.
- Pekrun, R., Goetz, T., Daniels, L. M., Stupinsky, R. H., & Perry, R. P., (2010). Boredom in achievement settings: Exploring control-value antecedents and performance outcomes of a neglected emotion. *Journal of Educational Psychology, 102*, 531–549.
- Pennebaker, J. (1990). *Opening up: The healing power of confiding in others*. New York: Morrow.
- Perry-Smith, J. E. (2006). Social yet creative: The role of social relationships in facilitating individual creativity. *Academy of Management Journal, 49*, 85–101.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*, 879–903.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*, 879–891.
- Randel, A., Jaussi, K., & Wu, A. (2011). When does being creative lead to being rated as creative? The moderating role of perceived probability of successfully bringing ideas to a supervisor's attention. *Creativity Research Journal, 23*, 1–8.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks, CA: Sage.
- Raudenbush, S., Bryk, A.S., Cheong, Y. F., Congdon, R., & du Toit, M. (2004). *HLM 6. Hierarchical linear & nonlinear modeling*. Lincolnwood, IL: Scientific Software International, Inc.
- Richards, J. M., & Gross, J. J. (2000). Emotion regulation and memory: The cognitive costs of keeping one's cool. *Journal of Personality and Social Psychology, 79*, 410–424.

- Runco, M. A. (2004). Everyone has creative potential. In R. J. Sternberg, E. L. Grigorenko, & J. L. Singer (Eds.), *Creativity: From potential to realization*. (pp. 21–30). Washington, DC: American Psychological Association.
- Schaubroeck, J., & Jones, J. R. (2000). Antecedents of workplace emotional labor dimensions and moderators of their effects on physical symptoms. *Journal of Organizational Behavior, 21*, 163–183.
- Schlenker, B. R., & Leary, M. R. (1982). Social anxiety and self-presentation: A conceptualization and model. *Psychological Bulletin, 92*, 641–669.
- Shalley, C. E., Zhou, J., & Oldham, G. R. (2004). The effects of personal and contextual characteristics on creativity: Where should we go from here? *Journal of Management, 30*, 933–958.
- Shin, S. J., Kim, T., Lee, J., & Bian, L. (2012). Cognitive team diversity and individual team member creativity: A cross-level interaction. *Academy of Management Journal, 55*, 197–212.
- Shin, S. J., & Zhou, J. (2007). When is educational specialization heterogeneity related to creativity in research and development teams? Transformational leadership as moderator. *Journal of Applied Psychology, 92*, 1709–1721.
- Smith, C. A., & Ellsworth, P. C. (1985). Patterns of cognitive appraisal in emotion. *Journal of Personality and Social Psychology, 48*, 813–838.
- Snijders, T., & Bosker, R. (1999). *Multilevel analysis*. London, England: Sage.
- Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: A new look at the interface between non-work and work. *Journal of Applied Psychology, 88*, 518–528.

- Tangney, J. P., Miller, R. S., Flicker, L., & Barrow, D. H. (1996). Are shame, guilt, and embarrassment distinct emotions? *Journal of Personality and Social Psychology, 70*, 1256–1269.
- Tangney, J. P., Wagner, P., Fletcher, C., & Gramzow, R. (1992). Shamed into anger? The relation of shame and guilt to anger and self-reported aggression. *Journal of Personality and Social Psychology, 62*, 669–675.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and wellbeing: A social psychological perspective on mental health. *Psychological Bulletin, 103*, 193–210.
- Tierney, P., & Farmer, S. M. (2002). Creative self-efficacy: Its potential antecedents and relationship to creative performance. *Academy of Management Journal, 45*, 1137–1148.
- Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relationships. *Personnel Psychology, 52*, 591–620.
- Triandis, H. C., & Suh, E. M. (2002). Cultural influences on personality. *Annual Review of Psychology, 53*, 133–160.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070.
- West, M. A., & Richter, A. W. (2008). Climates and cultures for innovation and creativity at work. In J. Zhou & C. E. Shalley (Eds.), *Handbook of organizational creativity* (pp. 211–236). New York: Erlbaum.
- Woodman, R. W., Sawyer, J. E., & Griffin, R. W. (1993). Toward a theory of organizational creativity. *Academy of Management Review, 18*, 293–321.

- Zhou, J. (2003). When the presence of creative coworkers is related to creativity: Role of supervisor close monitoring, developmental feedback, and creative personality. *Journal of Applied Psychology, 88*, 413–422.
- Zhou, J., & George, J. M. (2001). When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management Journal, 44*, 682–696.
- Zhou, J., & Hoever, I. (2014). Research on workplace creativity: A review and redirection. *Annual Review of Organizational Psychology and Organizational Behavior, 1*, 333–359.
- Zhou, J., & Shalley, C.E. (2008). Expanding the scope and impact of organizational creativity research. In J. Zhou & C. E. Shalley (Eds.), *Handbook of organizational creativity* (pp. 347–368). New York: Erlbaum.
- Zhou, J., Shin, S. J., Brass, D. J., Choi, J., & Zhang, Z. X. (2009). Social networks, personal values, and creativity: Evidence for curvilinear and interaction effects. *Journal of Applied Psychology, 94*, 1544–1552.

Table 1
Study 1. Intercorrelations among Variables^a

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Shame morning			--															
2 Shame afternoon			.54**	--														
3 Happiness morning			-.03	-.05	--													
4 Happiness afternoon			-.06*	-.16**	.56**	--												
5 Expressive Suppression			.19**	.13**	.01	-.02	--											
6 Creativity self-report			-.08*	-.10**	.41**	.45**	.02	--										
1 Shame morning	1.30	.54	--	.81***	-.24	-.33*	-.03	-.13	-.02	-.01	.17	-.16	-.21	-.02	.14	.15	-.08	-.35*
2 Shame afternoon	1.28	.50	.80***	--	-.20	-.35*	.18	-.09	.23	-.11	.07	-.09	-.12	-.05	.17	.03	-.24	-.16
3 Happiness morning	4.14	.81	-.05	-.07	--	.77***	.18	.66***	-.49***	-.24	.13	.40**	.12	.06	-.10	.37**	.04	.28*
4 Happiness afternoon	4.19	.77	-.10	-.13*	.77***	--	.17	.66***	-.36**	-.15	.13	.24	.08	.12	-.11	-.32*	-.16	.21
5 Expressive suppression	1.37	1.18	.25***	.23***	-.01	-.04	--	.23	-.06	-.05	-.11	.21	.09	.06	.08	-.15	.11	.10
6 Creativity self-report	3.84	.79	-.10	-.10	.55***	.53***	.01	--	-.25	-.36**	.27*	.25	-.05	.12	-.11	-.45***	-.11	.34*
7 Organization 1 ^b	.08	.28	-.04	.05	-.31***	-.16**	-.02	-.16**	--	-.21	-.20	-.17	-.01	-.23	.07	.01	-.17	.19
8 Organization 2 ^b	.48	.50	.05	-.01	-.16**	-.14*	-.02	-.23***	-.29***	--	-.49***	-.43***	-.05	-.02	.08	.60***	-.11	-.47***
9 Organization 3 ^b	.20	.40	.03	-.01	.13*	.10	-.04	.16**	-.15**	-.48***	--	-.41**	-.50***	-.17	-.43***	-.60**	.01	.25
10 Organization 4 ^b	.23	.42	-.06	-.02	.27***	.18**	.09	.23***	-.17**	-.53***	-.28***	--	.59***	.33*	.33**	-.02	.23	.13
11 Gender ^b	.61	.49	-.10	-.08	.08	.02	-.05	-.01	-.15*	-.01	-.18**	.27***	--	.08	.38**	.15	.05	.10
12 Tenure	4.52	5.11	.03	.06	.05	.01	.11	.05	-.11	-.01	-.11	.20***	.03	--	-.07	.03	.11	-.03
13 Shame trait	1.98	.88	.31***	.26***	-.01	-.04	.12*	-.04	-.01	-.01	-.18**	.18**	.05	-.01	--	.28*	.17	-.24
14 Task routine	3.50	.73	.19***	.15**	-.28***	-.26***	.14*	-.34***	-.04	.30***	-.28***	-.07	.06	-.04	.13*	--	.20	-.52***
15 Creativity supervisor rating	3.53	.75	-.14	-.04	-.04	-.09	-.12	.12	-.08	-.06	.11	.05	.08	.03	-.08	-.02	--	.15
16 Creative team environment	5.31	1.53	-.12*	-.13*	.20***	.19**	-.02	.22***	.09	-.24**	.19***	.05	-.04	-.03	-.13*	-.39***	.18*	--

^a Correlations in the top half of the table represent day-level correlations. Correlations below the diagonal in the bottom half of the table represent individual-level correlations (variables were aggregated to the individual level); correlations above the diagonal represent team-level correlations (variables were aggregated to the team level).

^b Dummy variable. Gender: female = 1, male = 0.

$N_{\text{days}} = 999; N_{\text{individuals}} = 286; N_{\text{teams}} = 53.$

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 2

Study 1. Hierarchical Multivariate Linear Modeling (HMLM) Results for Cross-Level Interactions of Expressive Suppression and Creative Team Environment with Shame on Creativity (Self-Report)

	Model 1		Model 2	
	γ	<i>SE</i>	γ	<i>SE</i>
<i>Level 1</i>				
Intercept	3.86**	.05	3.86**	.05
Shame-morning	-.02	.03	-.01	.03
Shame-afternoon	-.01	.03	-.01	.03
Happiness-morning	.03	.03	.04	.03
Happiness-afternoon	.25**	.04	.25**	.04
Expressive suppression (ES)	-.01	.03	.02	.03
<i>Level 2</i>				
Gender	-.06	.04	-.08	.05
Task	-.18*	.04	-.18**	.04
Routine				
Organizational Tenure	.02	.04	.02	.04
Shame-trait	.01	.04	-.01	.04
<i>Level 3</i>				
Organization 1	-.08	.05	-.09*	.05
Organization 2	-.06	.06	-.09	.06
Organization 3	.05	.06	.06	.06
Creative Team Environment (CTE)	.05	.06	.02	.06
<i>2-way Interactions</i>				
Shame-morning X ES			.04	.03
Shame-morning X CTE			.02	.03
ES X CTE			.02	.04
<i>3-way Interaction</i>				
Shame-morning X ES X CTE			.07*	.03
$\Delta\chi^2$	224.40**		236.13**	
Δdf	67		82	

Multilevel coefficients (standard errors) are shown; $N_{\text{day}} = 999$, $N_{\text{individuals}} = 286$, $N_{\text{teams}} = 53$; * $p < .05$; ** $p < .01$. $\Delta\chi^2$ were calculated following Hox (2002).

Table 3

Study 1. Hierarchical Linear Modeling (HLM) Results for Cross-Level Interactions of Expressive Suppression and Creative Team Environment with Shame on Creativity (Supervisor Ratings)

	Model 1		Model 2	
	γ	<i>SE</i>	γ	<i>SE</i>
<i>Level 1</i>				
Intercept	3.74**	.15	3.76**	.16
Shame	-.04	.05	-.02	.06
Happiness	-.03	.06	-.02	.06
Expressive suppression (ES)	-.08**	.04	-.09	.04
Gender	.04	.04	.02	.04
Task Routine	-.11	.06	-.14*	.06
Organizational Tenure	.07	.03	.08*	.04
Shame-trait	-.03	.06	-.01	.04
<i>Level 2</i>				
Organization 1	-.35	.26	-.43	.27
Organization 2	-.08	.19	-.09	.20
Organization 3	.05	.21	.04	.22
Creative Team Environment (CTE)	.10	.08	.11	.08
<i>2-way Interactions</i>				
Shame X ES			.04	.06
Shame X CTE			.03	.07
ES X CTE			.04	.06
<i>3-way Interaction</i>				
Shame X ES X CTE			.12*	.05
Pseudo R^2	.13		.15	

Multilevel coefficients (robust standard errors) are shown; $N_{\text{individuals}} = 196$, $N_{\text{teams}} = 36$;

* $p < .05$; ** $p < .01$. Pseudo R^2 was calculated following Snijders and Bosker's (1999) formulas.

Table 4
Study 2. Intercorrelations among Variables^a

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1 Shame	2.90	1.71	--	-.10	.23	.30	.07	.26	-.25	-.20	-.24	-.01
2 Happiness	6.29	.90	.12	--	.11	-.15	-.17	-.34*	-.10	-.03	-.08	.21
3 Expressive Suppression	3.84	1.55	.19*	-.03	--	.01	-.09	.14	-.26	-.18	-.24	.17
4 Gender ^b	.75	.43	.17*	.03	-.04	--	-.03	.26	-.34*	-.38*	-.38*	.19
5 Tenure	2.97	4.00	.14	-.12	.12	.05	--	.21	.32*	.30	.33*	-.42**
6 Task routine	2.11	.96	.15*	-.11	.10	.14	.28***	--	-.27	-.14	-.23	-.07
7 Incremental Creativity	3.14	1.96	-.09	-.13	-.13	-.19*	.24***	-.12	--	.73***	.95***	-.40**
8 Radical Creativity	2.14	1.57	-.03	-.06	-.08	-.20**	.24***	-.08	.75***	--	.91***	-.33*
9 Total Creativity	2.64	1.65	-.07	-.11	-.11	-.21**	.26***	-.11	.95***	.92***	--	-.39**
10 Creative team environment	5.77	1.41	-.01	.25***	.17*	.02	-.16*	-.08	-.15	-.17*	-.17	--

^a Correlations below the diagonal represent individual-level correlations; correlations above the diagonal represent team-level correlations (variables were aggregated to the team level).

^b Dummy variable. Female = 1, male = 0.

$N_{\text{individuals}} = 185$; $N_{\text{teams}} = 43$; $N_{\text{supervisors}} = 17$.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 5

Study 2. Hierarchical Linear Modeling (HLM) Results for Cross-Level Interactions of Expressive Suppression and Creative Team Environment with Shame on Total, Incremental, and Radical Creativity (Supervisor Ratings)

	Total Creativity				Incremental Creativity				Radical Creativity			
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	γ	<i>SE</i>	γ	<i>SE</i>	γ	<i>SE</i>	γ	<i>SE</i>	γ	<i>SE</i>	γ	<i>SE</i>
<i>Level 1</i>												
Intercept	3.25**	.35	3.23**	.34	4.01**	.44	3.93**	.42	2.25**	.23	2.44**	.28
Shame	.11**	.03	.13**	.04	.16**	.04	.19**	.04	.07*	.03	.08	.04
Happiness	-.02	.04	.02	.04	-.06	.05	-.05	.04	.03	.04	.09	.05
Expressive suppression (ES)	-.06	.05	.06	.04	-.10	.06	.04	.05	-.04	.04	.02	.05
Gender	.01	.04	.01	.04	-.02	.05	-.04	.06	.01	.03	-.04	.03
Task Routine	-.11	.08	-.09	.08	-.02	.09	.01	.11	-.21**	.07	-.23*	.09
Organizational Tenure	.43**	.09	.41**	.12	.53**	.11	.57**	.13	.31**	.10	.24*	.08
<i>Level 2</i>												
Creative Team Environment (CTE)	.07	.10	.15	.14	.31*	.13	.22	.14	-.20	.32	-.13	.19
<i>2-way Interactions</i>												
Shame X ES			.04	.07			.06	.07			.06	.10
Shame X CTE			.06	.06			-.04	.07			.10	.06
ES X CTE			.11*	.05			.15*	.06			.10*	.04
<i>3-way Interactions</i>												
Shame X ES X CTE			.25*	.11			.29**	.05			.14	.13
Pseudo R^2	.16		.26		.20		.29		.11		.22	

Multilevel coefficients (robust standard errors) are shown; $N_{\text{individuals}} = 185$, $N_{\text{teams}} = 43$, $N_{\text{supervisors}} = 17$; * $p < .05$; ** $p < .01$. Pseudo R^2 was calculated following Snijders and Bosker's (1999) formulas.

Table 6

Study 3. Means and Standard Deviations for Each Experimental Condition Across Dependent Variables.

	Shame			Control		
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
<i>Restore</i>						
High CTE ^a	5.98	.59	36	5.01	.85	33
Low CTE	5.26	1.14	37	5.21	.93	33
<i>Creativity Ratings</i>						
High CTE	2.69	.27	36	2.21	.35	33
Low CTE	2.31	.34	37	2.26	.37	33

^aCreative Team Environment

Table 7
Study 3. Results of Mediated Effects of Shame on Creativity

	Coefficient	<i>s.e.</i>	<i>t</i>	<i>p</i>
Independent variable (shame) to mediator (restore motivation)	.035	.015	2.401	.0177
Direct effect of mediator on dependent variable (creativity)	.070	.034	2.046	.0428
Total effect of independent on dependent variable	.025	.006	4.289	.0000
Direct effect of independent on dependent variable	.023	.006	3.833	.0002
Partial effect of control variables on dependent variable				
Creative team environment (CTE)	.015	.006	2.689	.0081
Shame X CTE	.004	.001	3.054	.0027
Protect motivation	.013	.025	.513	.6089
Bootstrapping results for indirect effects	Estimate	<i>s.e.</i>	95% CI	
			<i>LL</i>	<i>UL</i>
Indirect effect of independent on dependent variable through mediator	.0024	.0020	.0001	.0082

Table 8
 Study 3. Results of Mediated Moderation Effects of Shame and Creative Team Environment on Creativity

	Coefficient	<i>s.e.</i>	<i>t</i>	<i>p</i>
Independent variable (shame X creative team environment) to mediator (restore motivation)	.007	.003	2.498	.0137
Direct effect of mediator on dependent variable (creativity)	.070	.034	2.046	.0428
Total effect of independent on dependent variable	.004	.001	3.524	.0006
Direct effect of independent on dependent variable	.004	.001	3.054	.0027
Partial effect of control variables on dependent variable				
Shame	.023	.006	3.833	.0002
Creative team environment	.015	.006	2.689	.0081
Protect motivation	.013	.025	.513	.6089
Bootstrapping results for indirect effects	Estimate	<i>s.e.</i>	95% CI	
			<i>LL</i>	<i>UL</i>
Indirect effect of independent on dependent variable through mediator	.0005	.0003	.0001	.0014

Figure Captions

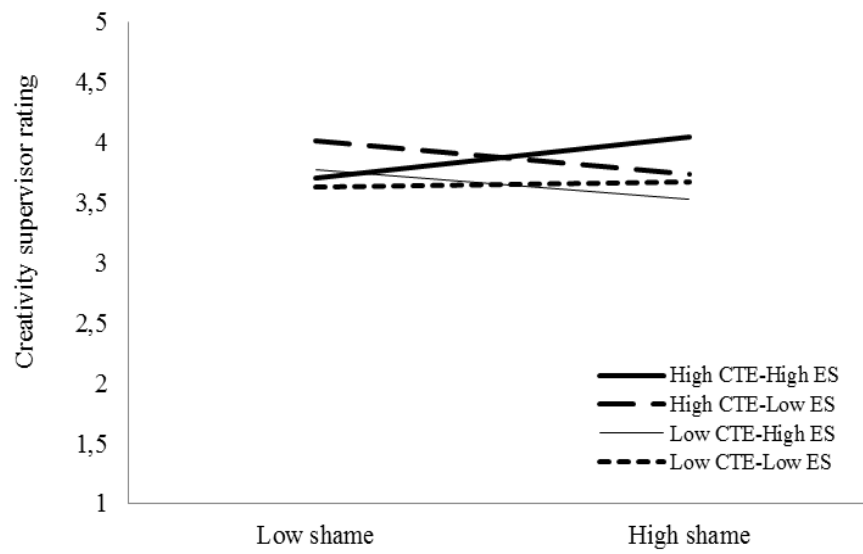
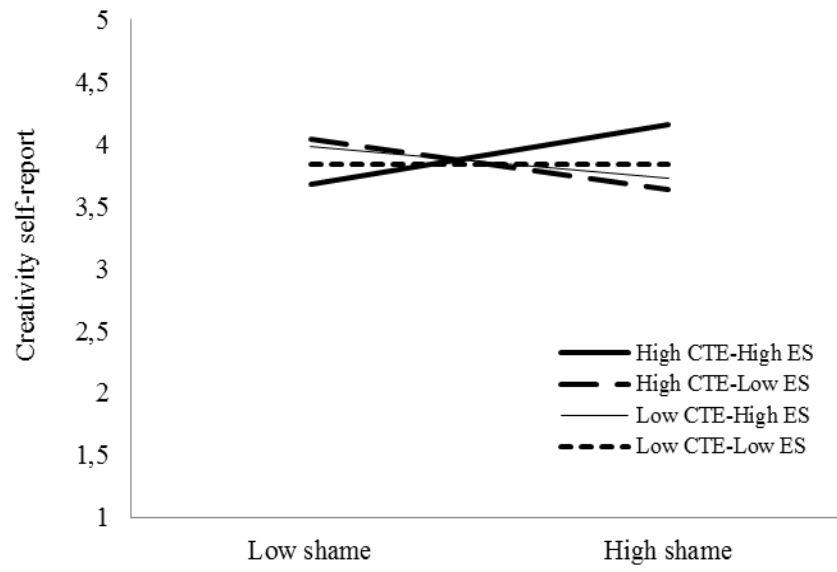
Figure 1. Study 1. The relation between shame, expressive suppression (ES), creative team environment (CTE) and creativity (self-report)

Figure 2. Study 1. The relation between shame, expressive suppression (ES), creative team environment (CTE) and creativity (supervisor rating)

Figure 3. Study 2. The relation between shame, expressive suppression (ES), creative team environment (CTE) and total creativity (supervisor rating)

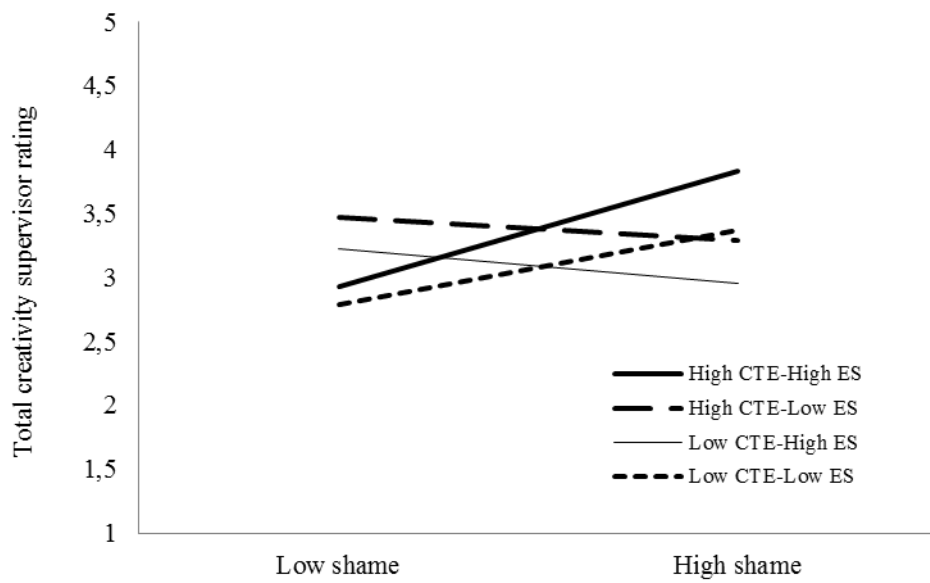
Figure 4. Study 2. The relation between shame, expressive suppression (ES), creative team environment (CTE) and incremental creativity (supervisor rating)

SHAME AND CREATIVITY

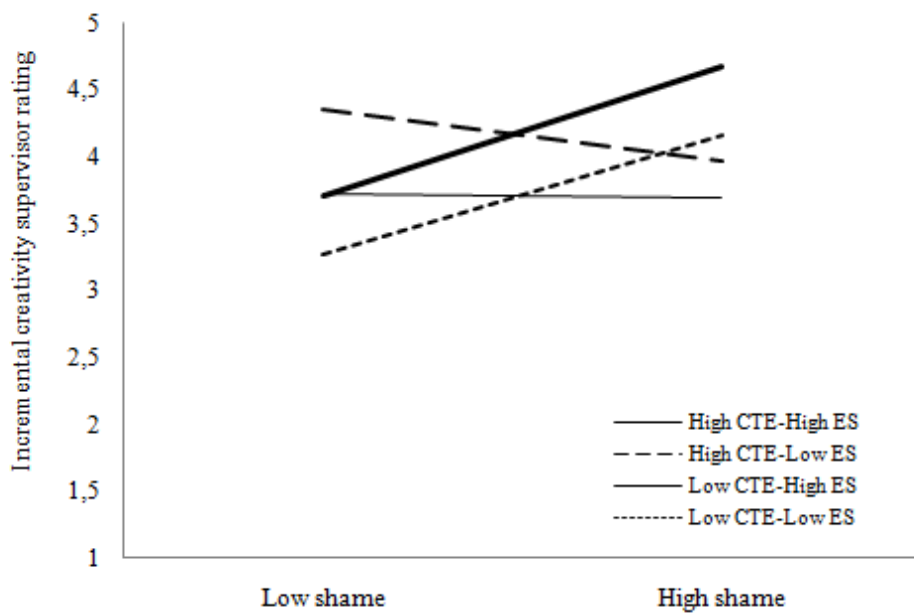


Note: High CTE/High ES slope is significant at $p < .05$

SHAME AND CREATIVITY



Note: High CTE/High ES slope is significant at $p < .05$



Note: High CTE/High ES and High CTE/Low ES slopes are significant at $p < .05$;

Low CTE/Low ES slope is significant at $p < .01$

Appendix

List of Measures Used in Study 1 (In Alphabetical Order)

Creative Team Environment (Gilson et al., 2005)

1. In my team, we welcome new ideas
2. In my team, people are encouraged to try new things, even though they might not work
3. We are willing to try creative solutions to solve difficult problems.

Scale ranged from 1 = (*not at all*) to 7 = (*completely*)

Creativity (Zhou & George, 2001)

1. Suggested new ways to achieve goals or objectives.
2. Came up with new and practical ideas to improve performance.
3. Searched out new technologies, processes, techniques, and/or product ideas.
4. Suggested new ways to increase quality.
5. Was a good source of creative ideas.
6. Was not afraid to take risks.
7. Promoted and championed ideas to others.
8. Exhibited creativity on the job when given the opportunity to.
9. Developed adequate plans and schedules for the implementation of new ideas.
10. Often had new and innovative ideas.
11. Came up with creative solutions to problems.
12. Often had a fresh approach to problems.
13. Suggested new ways of performing work tasks.

Scale ranged from 1 = (*not at all characteristic*) to 5 = (*very characteristic*)

Expressive Suppression (Adapted from Grandey et al., 2004)

1. I faked my feelings.
2. I tried to keep my feelings from interfering too much.
3. I tried to act as if nothing was happening.*
4. I left my feelings aside and tried to act natural.*

* Items added to the original scale.

Scale was rated as “yes” or “no”

Happiness (Self-developed)

To what extent do you feel right now?

1. Happy because I achieved a goal.
2. Content with a particular situation.
3. Happy because things have gone well.
4. Delighted with a particular situation.

Scale ranged from 1 = (*not at all*) to 5 = (*very much so*)

Shame (Self-developed)

To what extent do you feel right now?

1. Ashamed because something went different from what I expected.
2. A particular situation made me feel ashamed.
3. Ashamed because of a particular situation.
4. I feel I want to disappear from view.

Scale ranged from 1 = (*not at all*) to 5 = (*very much so*)

Task Routine (Beth, 1995)

1. The type of work done in my work unit is fairly consistent, so that people do the same job in the same way most of the time.
2. I encounter a lot of variety in my normal working day.*
3. The methods I follow in my work are about the same for dealing with all types of work, regardless of the activity.
4. To what extent is there a specific "right way" to do things in your job?
5. To what extent are there specific standards which you must meet in doing your work?
6. How much variety is there in your job?*
7. How often is your job boring?
8. How often can you predict how long a task will take?
9. How much does your job include problem-solving?*
10. How much routine is there in your job?
11. To what degree are there set patterns in your work day?
12. How often is your work simple?
13. To what extent is your job challenging?*
14. In general, how much actual "thinking" time do you usually spend trying to solve such specific problems?
15. To what degree does your work include actually performing tasks (rather than planning)?*
16. To what degree are there set patterns in your work week?
17. To what degree does your job include being creative?*
18. To what extent is your job tiresome?
19. How often does your work give you a sense of accomplishment?
20. To what extent do you feel like you are doing the same thing over and over again?

* Reverse coded items.

Scale ranging from 1 (*not at all*) to 7 (*absolutely*)

Additional Measures Used in Study 2 (In Alphabetical Order)

Creativity (Baer, 2010, 2012)

Please indicate to what extent each of the following statements is characteristic of [employee name]'s job:

Radical Creativity

1. Developed ideas that imply substantial departures from existing product and service lines.
2. Developed breakthrough ideas—not minor changes to existing products/services.
3. Developed ideas that make existing knowledge about current products/services obsolete.

Incremental Creativity

1. Developed ideas that reinforce existing product and service lines.
2. Developed incremental ideas—not major changes to existing products/services.
3. Developed ideas that reinforce existing knowledge about current products/services.

Both scales ranged from 1 = (*not at all characteristic*) to 7 = (*extremely characteristic*)

Expressive Suppression (Gross and John, 2003)

1. I control my emotions by not expressing them.
2. When I am feeling negative emotions, I make sure not to express them.
3. I keep my emotions to myself.
4. When I am feeling positive emotions, I am careful not to express them.

Scale ranged from 1 = (*strongly disagree*) to 7 = (*strongly agree*)

Task Routine (Morgeson and Humphrey, 2006)

1. The tasks on the job are simple and uncomplicated.
2. The job comprises relatively uncomplicated tasks.
3. The job involves performing relatively simple tasks.

Scale ranged from 1 = (*strongly disagree*) to 7 = (*strongly agree*)

Additional Measure Used in Study 3

Restore Motivation (De Hooge et al., 2010)

When working on the second set of ideas for the slogan, I wanted to:

1. Improve my self-image
2. Show myself I can present
3. Show myself I am good
4. Come better out into the open
5. Ensure myself I am competent

Scale ranged from 1 = (*not at all*) to 7 = (*very strongly*)

Protect Motivation (De Hooge et al., 2010)

When working on the second set of ideas for the slogan, I wanted to:

1. Avoid more damage to my self-image
2. Protect myself
3. Avoid another bad presentation
4. Avoid making a fool of myself again
5. Did not want to get a worse image of myself

Scale ranged from 1 = *(not at all)* to 7 = *(very strongly)*

Intrinsic Motivation (Tierney et al., 1999)

Please indicate the extent to which you agree or disagree that each statement currently describes your self-orientation:

1. I enjoy finding solutions to complex problems
2. I enjoy coming up with new ideas for products
3. I enjoy engaging in analytical thinking
4. I enjoy creating new procedures for work tasks
5. I enjoy improving existing processes or products

Scale ranged from 1 = *(not at all)* to 7 = *(exactly)*