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Can Autobiographical Writing Tasks Effectively Induce Discrete Shame and Guilt?

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Though shame and guilt are closely related self-conscious emotions, they have been validated as distinct constructs in their subjective experience, action tendencies, and association to psychopathology. Due to frequent interchangeable use of shame/guilt terms, experimental findings accounting for empirically-backed distinctions between these two emotion states are sparse. A recently-developed writing task sought to effectively induce discrete shame or guilt states, producing promising results. In the present study, we aimed to extend prior shame-guilt induction research by replicating this writing task with consideration of audience and population effects that may have impacted its validity in the prior study. Southern U.S. undergraduate students were randomized to one of three induction groups: shame ($n = 121$), guilt ($n = 125$), or control ($n = 125$). A state measure of shame and guilt was administered to assess state shame and state guilt following the emotion induction tasks. Results indicated that the shame and guilt inductions each evoked greater state shame and state guilt than the control, but no differences were seen between those two inductions. Overall, writing tasks did not differentiate shame from guilt as expected based on results of prior published work. Based on the inability to replicate previous findings, it is unclear if consistent and discrete guilt/shame evocation via this experimental task is feasible. Future directions for the improvement of guilt and shame experimental inductions are discussed.

Keywords: experimental manipulation; guilt; shame; writing task

Self-conscious emotions are a unique class of affective experiences that involve evaluations of the self, based on both socially- and self-prescribed standards (Lewis et al., 1991; Tracy & Robins, 2004). Shame and guilt are two self-conscious emotions that serve critical roles in the regulation and motivation of people's cognitive, emotional, and behavioral tendencies by providing salient and immediate feedback on the satisfactoriness of one's current state (Campos, 1995; Leith & Baumeister, 1998; Tangney et al., 2007). Correlations between shame, guilt, and various forms of psychopathology, including substance use, trauma-related, anxious, depressive, and eating symptoms, have been demonstrated in past studies (e.g., Fergus et al., 2010; O'Connor et al., 1999; Pineles et al., 2006). Findings point to shame, more than guilt, serving a potentially causal role in relation to psychopathology, suggesting a need for a clearer examination of the independent contributions of shame and guilt on other psychological variables (Pineles et al., 2006; Tangney et al., 1992; Weingarten & Renshaw, 2015).

Shame and guilt are frequently used interchangeably in psychological literature, despite having been validated as distinct constructs in their subjective experience, related action tendencies, and association to psychopathology. Consequently, empirical findings are lacking with regard to precursors, effects, or correlates of shame-free guilt or guilt-free shame, with numerous studies indiscriminately examining guilt and/or shame results. Shame is described as a "deeply painful" negative self-judgment experience, in which individuals typically label themselves as entirely defective or bad (Lewis, 1971; Weingarten & Renshaw, 2015). The heightened levels of distress and emotional pain experienced during shame are in part a result of the introspective nature of attention involved in shameful states, as compared to guilt's prompting of attention toward others' emotional pain (Joireman, 2004; Leith & Baumeister, 1998; Tangney & Dearing, 2002). Further, a "self-behavior" distinction is well-validated in the study of shame and guilt, with shame involving large-scale, permanent, and wholly negative evaluations of self ('I am a bad person'), while in guilt attributions are placed on specific instances or actions, and they represent temporary, context-based judgments ('I did a bad thing') (Janoff-Bulman, 1979; Lewis, 1971; Tangney & Dearing, 2002; Tracy & Robins, 2004). Unable to repair this perceived "bad" self through direct action, those experiencing shame often attempt to mitigate distress via avoidance, withdrawal, increased self-focus, or neutralization strategies, while those experiencing guilt's emphasis on specific behaviors are more likely to "undo" or take reparative action following a transgression (Sheikh & Janoff-Bulman, 2010; Tangney & Dearing, 2002; Yang et al., 2010).

Given shame and guilt's distinctiveness in terms of subjective experience, related action tendencies, and association to psychopathology, it appears that independent examinations of the influence of each emotion may be warranted. However, the mixed use of the terms *shame* and *guilt* in the literature has resulted in a lack of empirical work on clearly delineated effects, precursors, or correlates of the two emotions, with numerous studies indiscriminately examining guilt and/or shame results (Austin & Richards, 2001; Candea & Zentagotai-Tata, 2018). Experimental

evaluations accounting for empirically-backed distinctions between these two emotion states, or studies successfully invoking shame or guilt independently, are particularly sparse. In order to address this gap in the literature, greater attention and development must be focused on experimental methodology to differentiate the two emotions.

Self-report measures, which are typically single-item measures (e.g., Epstein, 1980; Gross et al., 1993), scenario-based (e.g., Test of Self-Conscious Affect; Tangney & Dearing, 2002), checklist-based (e.g., Personal Feelings Questionnaire-2; Harder & Zalma, 1990), or state-based (e.g., State Shame and Guilt Scale; Marschall et al., 1994), provide a commonly used and beneficial method for differentiating between shame and guilt. However, methods to produce direct, experimentally-induced, and momentary effects of state-level affect may be used to establish a potential causal role of shame and guilt. There has been longstanding interest in the development of shame-specific and guilt-specific transgressions or triggers (Tangney et al., 1996) and yet, not consistent ones have been identified. Mood inductions, in which participants typically complete an autobiographical writing task followed by a self-report inventory focused on the emotion of interest, serve as a potential avenue by which causal effects of maladaptive affective states on behavior and thoughts may be examined (Kucera et al., 2012; Martin, 1990; Polivy, 1981).

Two research groups have attempted to discretely induce guilt and shame states based on modern understandings of these differing affective experiences, including behavioral urges, phenomenological descriptors, and focus of evaluations (Cavalera et al., 2014; 2018; de Hooze et al., 2007), to date. As an example, de Hooze et al (2007) adapted a methodology to induce guilt and shame discretely and separately involving an autobiographical writing task. Though participants in the study did report guilt and shame scores consistent with their writing task (e.g., guilt writing task produced higher guilt rating; shame writing task produced higher shame rating; control writing task produced neither guilt nor shame), several potential methodological limits suggest alternate explanations for these results. In fact, de Hooze et al. themselves posit that their guilt and shame induction may not have been entirely successful in manipulating the two emotions distinctly. For example, participants were asked to give shame and guilt intensity ratings for the autobiographical event they *reported*, rather than their current state experience. As such, the induction in this particular study may not have produced in-vivo changes in both of these states, with participants instead retrospectively rating the level of shame or guilt felt during the event they were writing about. Additionally, de Hooze et al. utilized writing prompts directly referencing emotion labels (e.g., 'write about a time you felt guilty'). Past research suggests that individual parsing ability based only on shame/guilt labels may be inadequate, meaning that simple emotion labels may not fully differentiate the two (Tangney & Dearing, 2002). Finally, this task does not include specific reference to locus of evaluation, behavioral urges, or attentional focus, meaning that it is unlikely the manipulation fully captured the guilt-shame difference in its induction (Tangney & Dearing, 2002). Given that guilt and shame frequently co-occur

and are often empirically conceptualized as two points on an affective spectrum of attention, evaluation, and associated urges, incorporation of these features may be critical in capturing the distinct nature of these two emotions.

A writing task developed by Cavalera et al. (2014) sought to more effectively discretely induce shame and guilt as part of a larger examination of the relationship between negative self-conscious emotions and cognitive performance. This novel induction utilizes timed autobiographical prompts for shame and guilt, as well as a separate non-emotional prompt (i.e., describing furniture within the room) as a control condition. In their initial evaluation, Cavalera et al. (2014) found that their guilt induction caused greater guilt than the control or shame induction, and that their shame induction caused greater shame than the control of guilt induction. Moreover, their control induction did not evoke significant guilt or shame. This pattern of results was replicated in a subsequent investigation by the same authors (Cavalera et al., 2018). Overall, Cavalera et al.'s (2014; 2018) work improves upon the work of de Hooge et al. (2007) by using prompts that not only incorporate affective labels (e.g., "ashamed"), but also critical shame/guilt distinctions in evaluation of self (e.g., "you felt so bad about yourself") and action urges (e.g., "you wanted to deny it or to hide and run away").

Though Cavalera et al.'s (2014, 2018) work provides a promising next step for discrete shame and guilt induction, thus far the manipulation has only been used in those two studies. The utility of the methodology used in the studies is somewhat limited at this time, due to several features of their study design. For example, Cavalera et al. (2014, 2018) utilized an in-person methodology for the shame and guilt manipulation, which they indicate may have influenced their results due to the experimenters re-entering the room and potentially amplifying the emotional response to the written task. Since shame and guilt are social emotions, the possibility of perceived supervision or potential interpersonal cost to one's actions could play a role in shame or guilt production (Lewis, 1991; Tangney & Tracy, 2012). As part of the growing expansion of telehealth and virtual clinical and research work in the psychology field, mood manipulations delivered via Web-based programs are becoming more routine in the literature (Goritz & Mozer, 2006; Marcusson-Clavertz et al., 2019). As such, examination of a remote administration of Cavalera et al.'s (2014, 2018) shame/guilt inductions may not only attenuate potential audience effects by eliminating in-person facilitator interaction, but also allow for greater accessibility and utility of the methodology for future research.

An additional benefit of replication and extension lies in Cavalera et al.'s (2014, 2018) original inductions being conducted exclusively with samples of Italian undergraduate students, delivered in Italian-language format. To date, no replications of these inductions with an English-speaking or non-Italian population have been conducted. It is also possible that cultural distinctions in the experience and expression of self-conscious emotions may be relevant to the efficacy of the induction (Matsumoto, 2008; Mesquita, 2001). Cavalera et al. (2018) recommended that future studies should seek to verify the efficacy of their induction procedure for independent guilt and shame

elevations in alternate populations. As such, a fruitful next step in the study of guilt and shame as causes for psychological sequelae may be a validation of existing methodology within the context of remote, English-speaking participant populations. Such a replication should also clarify any necessary culturally-relevant adaptations that may arise when administering the inductions to populations other than those involved in Cavalera et al.'s original studies. Of note, both Cavalera et al.'s prior studies and the present study involved an abundance of female-identifying participants. It is likely that gender may contribute to individual differences in self-conscious emotion expression, as evidenced by past findings on distinctions in socialization patterns (Brody, 2008), and differences in frequency of shame-guilt experiences (Else-Quest et al., 2012). As such, gender-related factors may be at play within both Cavalera et al.'s findings and results of the current examination.

In the present study, we aimed to extend prior shame-guilt induction research by replicating the writing task developed by Cavalera et al. (2014), in which empirically-backed shame and guilt distinctions were utilized to create a seemingly effective induction task of state shame and guilt, respectively. Beyond Cavalera et al.'s original methodology, the current work could serve as a basis for the extension for this induction task toward remote, non-Italian populations, thereby potentially clarifying any requisite population or audience effects and allowing for greater utility of the methodology in future studies. Study predictions were that the shame induction would produce significantly higher levels of state shame than guilt or control conditions, that the guilt induction would produce significantly higher levels of state guilt than shame or control conditions, and that the control condition would not significantly elevate state guilt nor state shame.

Methods

Participants

Shame and guilt appear best viewed as continuous, versus discrete, variables, suggesting these experiences differ in severity rather than evidencing qualitative differences across individuals (Tangney & Dearing, 2002). Given the continuous nature of these emotional states and limits to selecting participants based upon extreme scores (Preacher et al., 2005), the present study used a sample unselected based upon the propensity to experience shame or guilt. This approach is consistent with prior research examining the experimental manipulation of interest among unselected samples (Cavalera et al., 2018). Large effect sizes demonstrated in similar studies of affect inductions (e.g., Mancini et al., 2008) were not utilized to estimate the likely effect size for the current study due to differences in methodology (e.g., prior research using a median split to put participants into low and high guilt prone groups). As a result of these distinctions in methodology, a more conservative medium effect was chosen for power analysis. A power analysis using G*Power 3.1 (Erdfelder et al., 1996) indicated that a total sample size of 53 participants per experimental group was needed to achieve an .80 estimate for power considering a medium effect size of 0.25 (Serdar et al., 2021).

Participants were 717 undergraduate students at a Southern U.S. university. A two-phase methodology was utilized to help ensure that responses to experimental manipulations did not impact responses to trait variables used to examine experimental group equivalency on proneness to shame and guilt. A total of 379 (of 717) participants completed both Phase I and Phase II of the study in its entirety (“two-phase participants”) and those two-phase participants were the primary focus of the present analyses. The reason why 338 participants (“one-phase only participants”) completed *only* a single phase of this study protocol is most likely explained by availability of alternate, one-phase studies that would fulfill research participation credits.

Sociodemographic variables and study variable scores of one-phase only and two-phase participants are presented in Table 1. Two-phase participants primarily self-identified as female and white, with about one-quarter of total participants reporting a history of receiving a diagnosis of a psychological disorder. Depression or an anxiety disorder were the most common disorders reported by participants. No significant differences on sociodemographic characteristics and the study variable scores were generally seen across the two participants groups. Exceptions included more female-identifying individuals becoming two-phase participants than their male-identifying counterparts, as well as two-phase participants endorsing greater guilt-related negative behavior evaluation than one-phase participants with a small difference in magnitude seen (Cohen’s $d = 0.31$).

Measures

Guilt and Shame Proneness Scale (GASP; Cohen et al., 2011). A measure of proneness to shame and guilt was used to examine experimental group equivalency in the propensity to

experience the respective self-conscious emotions. The GASP is a 16-item measure created to identify individual differences in the proneness to experience shame and guilt. Respondents read a scenario and rate each item using a 7-point scale. The GASP was developed to capture empirically-backed differences between shame and guilt, including the self-behavior distinction and avoidance/repair urges. The GASP is scored by summing select items to create four subscales [Negative Behavior Evaluation (guilt); Urge to Repair (guilt); Negative Self-Evaluation (shame); Urge to Withdraw (shame)] The GASP guilt scale shares significant correlations (r s ranging from .19–.66) with alternate measures of guilt and guilt features (Cohen et al., 2011; Cohen et al., 2012; Schaumberg & Flynn, 2012). The GASP shame scale shares significant correlations (r s ranging from .20–.66) with alternate measures of shame and shame features (Cohen et al., 2011; Schaumberg & Flynn, 2012). Reliability scores for scenario-based measures are typically lower due to the inherent variance in response (Tangney, 1996; Tangney & Dearing, 2002). As a result, typical benchmarks for scenario-based measures are set at approximately .60, based upon recommendations regarding measurement context (Schmitt, 1996; John & Benet-Martinez, 2000). Internal reliability scores for the subscales of the GASP were acceptable in the current study based upon those recommendations for scenario-based measures (α s ranging from .60–.69).

The State Shame and Guilt Scale (SSGS; Marschall et al., 1994). The SSGS is a 15-item self-report measure that asks participants to indicate to what extent various statements (e.g., “I feel small”) describe their current feelings on a 5-point scale. Though the SSGS consists of three subscales (shame, guilt, and pride), only the 10 items pertaining to shame and guilt were administered in the present study. The SSGS has demonstrated

Table 1. Equivalency Across Phases and Experimental Groups

Variable	Phase I only %	Phase II %		G%	S%	C%	
			χ^2				χ^2
<i>Gender</i>			3.88*				1.32
Male	31.7	25.0		27.2	26.4	21.4	
Female	68.3	75.0		72.8	73.6	78.6	
<i>Race/ethnicity</i>			6.35				16.19
Asian	12.4	15.3		16.0	16.5	13.5	
Bi-/Multi-Racial	5.3	6.2		9.6	3.3	5.6	
Black/AA	7.7	6.5		4.8	8.8	4.8	
Hispanic/Latinx	13.9	12.1		13.6	14.9	7.9	
Native American	1.2	0.5		53.6	55.4	67.5	
White	57.4	58.9		0.8	0.8	0.8	
Other	2.1	0.5					
<i>Medical Dx</i>	12.4	9.7	1.37	11.2	7.4	10.3	1.09
<i>Psych Dx</i>	21.0	23.4	0.58	22.4	21.5	26.2	0.86
	<i>Mean (SD)</i>		<i>F</i>	<i>Mean (SD)</i>		<i>F</i>	
	Phase I only %	Phase II %		G	S	C	
GASP guilt NBE	5.36 (1.30)	5.02 (.86)	17.46*	5.40 (1.32)	5.55 (1.10)	5.75 (1.04)	2.91
GASP guilt repair	5.73 (.98)	5.87 (.91)	3.82	5.82 (.92)	5.92 (.98)	5.87 (.84)	0.38
GASP shame withdraw	3.23 (1.21)	3.22 (1.21)	0.00	3.31 (1.17)	3.21 (1.27)	3.15 (1.19)	0.52
GASP shame NSE	5.84 (1.12)	5.97 (1.04)	2.73	5.85 (1.07)	5.97 (1.10)	6.10 (.93)	1.74
Age	18.94 (1.31)	18.82 (1.54)	1.25	18.86 (1.50)	18.92 (1.98)	18.69 (1.01)	0.72

Note. * $p < .05$. $N = 717$ (Phase I only $n = 338$; Phase II $n = 368$). G= guilt induction condition ($n = 123$), S = shame induction condition ($n = 120$), C = control condition ($n = 125$).

sensitivity to manipulation when used to assess self-conscious emotions in a number of experimental studies (e.g., Gino et al., 2013; Held et al., 2015; Marschall et al., 1994). Though the SSGS scales are moderately positively correlated ($r = .67$), the separate shame and guilt dimensions have been supported by confirmatory factor analysis, appear to be normally distributed, and demonstrate expected changes following affect manipulation, indicating that this measure may be useful as a manipulation check (Cavalera & Anolli, 2013; Cavalera et al., 2017; Cavalera et al., 2018; Zurloni et al., 2015). Both the shame and guilt scales demonstrated good internal consistency in the current study across the three experimental conditions (*as* ranging from .86–.92).

Procedure

The study protocol was reviewed and approved by the affiliated university institutional review board. Participants responded to online informed consent documents prior to engagement in the respective studies and received partial course credit for study completion. Data collection occurred in two phases. Both phases were located entirely online, via Qualtrics surveys. In Phase I, participants followed a unique study URL (generated by Qualtrics) in order to complete informed consent documentation, after which they were prompted to respond to the GASP, in order to examine potential group differences on proneness to shame and guilt.

Participants who completed Phase I of the study were eligible to participate in Phase II approximately one week after completion of Phase I. Participants were randomized to one of three induction groups (shame, guilt, control), and given a writing task aimed at promoting levels of specific emotion targets (see Appendix A). Each induction involved instructions for a 10-minute written exercise aimed at eliciting differing negative emotional experiences, based upon distinctions drawn by Tangney and Dearing (2002). After the induction tasks, participants were prompted to respond to questionnaires on state levels of shame and guilt. Participants then viewed an electronic debriefing form.

Results

Preliminary Analyses

Of the 379 two-phase participants, three participants had significant missing responses in at least one of the phases (e.g., no questionnaire responses provided) and were deleted from analyses leaving 376 two-phase participants at this step of preliminary analyses. Randomization checks and comparisons were used to examine group equivalence for all baseline variables, including shame-proneness, guilt-proneness, and sociodemographic characteristics (see Table 1). No differences greater than what would be expected by chance were seen, with even distribution ratios across experimental groups for all variables.

Although Cavalera et al. (2014; 2018) did not monitor engagement with mood induction stimuli in their original studies, assessments of effort on shame, guilt, and writing tasks were utilized in the current examination. Mood induction tasks

may produce distress in participants, resulting in abandonment, avoidance, or other disengagement from procedures, particularly for individuals completing these exercises via web or remote modalities (Marcusson-Clavertz et al., 2019). As such, assessments of participant effort were used to evaluate engagement with the writing task, in the absence of in-vivo observations.

Responses to writing tasks on the shame, guilt, and control induction task were assessed. “Good enough” effort was operationalized via four rating metrics: (1) reference to unpleasant/bad/regretful experience, (2) reference to a reaction to an unpleasant/bad/regretful experience, (3) reference to a situation associated with a negative emotional state, or (4) direct naming of a negative emotion state that was experienced. Raters were not blind to overall study hypotheses, but remained blind to condition in order to limit biases in evaluation of responses. Should either rater deem a response invalid, the response was removed from final data. Ratings were primarily based on content-related criteria. For example, in the experimental condition, raters noted whether responses included an unpleasant, bad, or regretful experience or reaction, a situation associated with a negative emotion state, explicit labeling of a negative emotion state. There was good (Cicchetti, 1994) agreement between two independent raters on acceptability of responses ($k = .66$, $p < .005$). Consideration of rater responses led to discarding eight cases, dispersed across experimental and control conditions (four from shame, three from guilt, and one from control), due to unacceptable effort given on writing tasks as indicated by one or both independent rater. This process led to a final analyzed sample of 368 responses.

A computerized text analysis (i.e., LIWC-22; Boyd et al., 2022) was used to examine the responses across the three groups. There was an equivalent number of average words used in the prompts across the three groups (shame: $Mean = 204$, $SD = 117$; guilt: $Mean = 212$, $SD = 117$; control: $Mean = 199$, $SD = 110$; $F = 0.41$, $p = .663$). Tone in LIWC-22 is a single summary score (ranging from 1 to 100) that quantifies the valence of the written prompt with lower scores indicating a more negatively valenced tone. The three groups significantly differed in their average tone (shame: $Mean = 11.01$, $SD = 16.89$; guilt: $Mean = 7.91$, $SD = 12.60$; control: $Mean = 33.93$, $SD = 19.85$; $F = 90.97$, $p < .001$). Least significant difference post-hoc tests indicated that the shame ($d = 1.24$, $p < .001$, difference from control) and guilt ($d = 1.57$, $p < .001$, difference from control) written prompts had significantly greater negatively valenced content than the control with large effect sizes observed. There was no significant difference between the shame and guilt conditions in the average tone of the prompts ($d = 0.21$, $p = .143$). A meaning extraction method in LIWC-22 was used to identify common themes across the prompts. The most common themes in the shame written prompts were “felt” and “ashamed” seen in approximately 71.55% and 65.86%, respectively, of prompts. The most common themes in the guilt written prompts were “felt” and “guilty” seen in approximately 76.19% and 70.64%, respectively, of prompts. The most common themes in the control written prompts were “room” and “desk” seen in approximately 76.98% and 56.34%, respectively, of prompts.

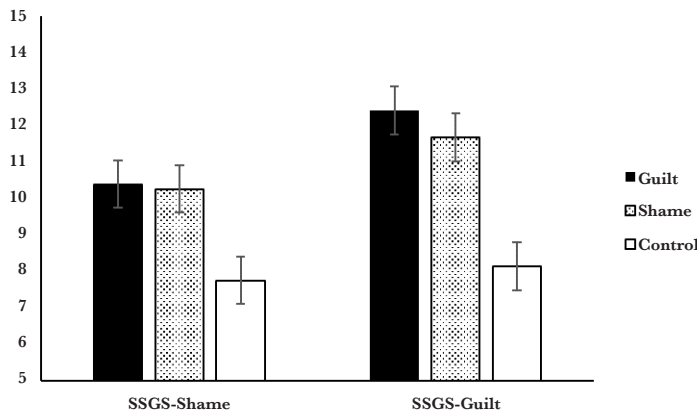


Figure 1. Mean-level group differences in shame and guilt across the experimental groups with standard errors presented.

Induction

Two one-way analysis of variance analyses (ANOVAs) were used to examine the hypothesis that the shame induction and guilt inductions would produce higher levels of shame and guilt, respectively. No cases were overly influential on the reported study findings, as Cook's D_i values all fell below 1.0 (Cohen et al., 2003). The ANOVA results partially supported in the current sample (see Figure 1). There was a main effect of experimental group on state shame ($F_{(2, 365)} = 11.29, p < .001$; observed power = .99) and state guilt ($F_{(2, 365)} = 21.60, p < .001$; observed power = .99) scores. The guilt induction caused greater state shame ($d = 0.55, p < .001$) and greater state guilt ($d = 0.80, p < .001$) than the control condition. Additionally, the shame induction caused greater state shame ($d = 0.57, p < .001$) and greater state guilt ($d = 0.69, p < .001$) than the control condition. However, the guilt and shame inductions led to equivalent state shame ($d = 0.02, p = .837$) and state guilt ($d = 0.12, p = .288$) in relation to one another. Overall, though writing tasks appear to have generally increased negative self-conscious negative affectivity, they did not differentiate shame from guilt.¹

Discussion

A well-validated induction that distinctly evokes heightened shame versus guilt is important to the field to help allow for clearer and more finite understandings of the distinct roles and correlates of these two self-conscious emotions. The current study aimed to extend the work of Cavalera et al. (2014) by further

examining a mood induction in which discrete guilt and shame states may be produced. Thus far, only two (Cavalera et al. 2014, 2018) studies have utilized the manipulation. Study predictions that experimental conditions (shame induction, guilt induction) would produce significantly higher levels of the relevant affect than one another and as compared to a control condition were not supported in the present examination. Though writing tasks appear to have generally increased negative self-conscious affectivity, they did not differentiate shame from guilt. Therefore, the writing task developed by Cavalera et al. was not supported as a means to separately engender shame versus guilt with the current sample.

Given the inability to differentially induce shame and guilt states via mood induction in the current study, the question of shame and guilt's status as distinct affective states may arise. As reviewed, conceptually both shame and guilt often occur following perceived transgressions, serve a self-regulatory and perfectionistic function, and involve individual standards (Tangney, 2003). However, despite these close temporal and empirical links, the differing experiences and consequences of shame and guilt are well-demonstrated across the empirical literature (Candea & Szentagotai-Tata, 2018). Based upon the inability to replicate findings from Cavalera et al. (2014, 2018), it is unclear at this time if consistent and discrete evocation of guilt and shame via this experimental task is consistently feasible.

Potential Task Limits

One potential limit with Cavalera et al.'s (2014, 2018) method relates to concerns with autobiographical memory/writing tasks themselves. In both the current study and in Cavalera et al.'s work, individuals in guilt and shame writing conditions selected their negative autobiographical experiences in an idiographic manner. This manipulation structure may not have accounted for the chronological ordering of memories for emotion. For example, shame and guilt may be reported differentially in autobiographical writing tasks due to the temporal structuring of affective memory. Individuals are more likely to report shame events that took place further in the past, as compared to guilt events (Rime et al., 1991). Given this pattern of affective ordering, writing and thinking about more distal events could be more shame provoking, whereas focus on more proximal events could provoke more guilt. As the affective induction prompt used in this study included no temporal specifiers for the guilt or shame event, it is possible that chronological effects diluted the efficacy of the differing experimental conditions.

Not only is it possible that these temporal variables confound guilt/shame differences, but many of the other purportedly induced distinctions might have been lost during autobiographical procedures. One primary distinction between guilt and shame states is the focus of evaluation (self-behavior distinction, Lewis, 1971; Tangney & Dearing, 2002). However, when guilt experiences are allowed to magnify or generalize, shame states closely follow (i.e., 'look at the bad thing I have done' becomes 'I am a bad person'; Tangney et al., 2007). It is possible that the

¹ Anonymous reviewers suggested different analytic approaches to further examine the robustness of the reported pattern of findings, including restricting analyses to only female-identifying participants and restricting analyses based upon reported history of mental health diagnosis. Moreover, it was suggested to use a residual score (partialing out the effect of the other self-conscious emotion) as the criterion variable. The pattern of reported findings remained unchanged when examining these alternative approaches.

10-minute forced-time writing task allowed for generalization across guilt-shame distinctions, thereby spoiling discrete emotion states over time and confounding experimental groupings. Future studies may be able to clarify this potential confound, with precise monitoring of task completion as well as measurement of delay between appearance of the prompt and completion of the written task.

COVID and Web-based Design

The global COVID-19 pandemic itself may be conceptualized as a limitation for the current study. Quarantining, sudden change in behaviors, lessened socialization, and chronic perceived threat all have a detrimental effect on mental wellbeing (Islam et al., 2020). Further, increased social media use while social distancing has been linked to broad changes in affect and self-perception (Sahoo et al., 2020). Examinations of self-conscious emotion during the COVID-19 pandemic have revealed that both guilt and shame may currently be globally increased due to ongoing stressors, exaggerated feelings of responsibility, infection/risk stigma, perceptions of COVID-related devaluation/weakness, and lessened opportunities for repair (Brooks et al., 2020; Haller et al., 2020; Ransing et al., 2020; Sahoo et al., 2020). Given these pandemic-related changes in affect, perception of self, and social interaction, it is difficult to evaluate the results of the current study in the context of a non-pandemic time period. An additional limit in the context of COVID-19 is the lack of assessment of specific personal influence of the pandemic on each participant's life. Since the effect of the pandemic on participants' lives was not assessed in the current study, the relationship between level/directness of impact and shame and/or guilt for the sample population was not evaluated.

It is also relevant to note that due to COVID-19 pandemic restrictions, the autobiographical emotion manipulation utilized in the current study was delivered entirely online, while Cavalera et al.'s (2014, 2018) use was in-vivo due to concerns regarding potential audience effects of experimenter presence. Both the online-only nature of the research as well as the chronic environmental stress of a global pandemic may have served as limitations of the work. Though web-based psychological experimentation can be advantageous for accessibility and convenience, web-based mood inductions have shown mixed results due to incidental emotion production, aversion to disclosure of intimate information, and concerns about privacy (i.e., Birnbaum 2004; Kim, 2008; Marcusson-Clavertz et al., 2019). Despite the good effort that was generally found across conditions in the current study, with computerized text analysis further supporting engagement with the written prompts (i.e., number of words, tone, and central themes), it is difficult to maintain a parallel level of control over web-based mood induction, compared to in-person modalities. Participants who experience distress, as is likely in negative affect inductions, may abandon, avoid, or otherwise disengage from the procedure more easily than those who are completing the study in-person (Marcusson-Clavertz et al., 2019).

Sample characteristics

Results and interpretations of the current work should be considered with population characteristics in mind. Though the use of an unselected undergraduate population was supported by past studies of self-conscious affect, important future extensions of the present research with participants who consistently report higher frequencies of shame and guilt experience may be beneficial. Additionally, shame and guilt have been shown to fluctuate in severity and chronicity across the life span, with undergraduate years having been shown to be a sensitive period for significant and rapid changes in self-perceptions and self-worth, both positive and negative (Pittman & Richmond, 2008). Further, Cavalera et al.'s (2014, 2018) original induction was conducted with a sample of Italian undergraduate students, while the current study utilized a sample of U.S. undergraduate students. Past cross-cultural studies demonstrate cultural distinctions in sensitivity, labeling, and proneness of guilt and shame among societal and ethnoracial groups that may suggest greater practice and emphasis on guilt and shame states for Italian young adults when compared to American participants (e.g., Anolli & Pascucci, 2005; Matsumoto, 2008; Mesquita, 2001). Broadly, these findings might suggest that Italian young adults may be more skilled and practiced in differentially identifying shame and guilt experiences than American participants of the same age, which may in part underlie the lessened effectiveness of Cavalera et al.'s manipulation in the current study.

Measurement and SGSS

Of note, pre-induction measures of guilt, shame, or other self-conscious emotions were not administered. This methodology was utilized as it most closely mirrored Cavalera et al.'s (2014, 2018) procedures. As such, an assumption implicit in the current examination is that baseline level of affect should not greatly influence efficacy of the writing tasks. However, it is likely that inclusion of pre-manipulation state affect would allow for greater understanding of the relative impacts of guilt, shame, and control induction tasks in future research.

Given the SSGS's acceptable internal consistency, past demonstration of manipulation sensitivity, consistency with modern affective literature, and successful utilization in the work of Cavalera et al. (2014; 2018), the SSGS was chosen for the present study. Despite these strengths, the ability of the SSGS to provide distinct assessments of guilt and shame states is contentious, with a large correlation appearing between guilt and shame scales ($r = .82$ in the current study; $r = .62-.67$, Cavalera et al., 2018, Fergus & Valentiner, 2012). This empirical overlap is likely due to the absence of explicit behavior reference in the measure, meaning Lewis's self-behavior distinction may not be adequately captured by the measure (Lewis, 1971; Tangney & Dearing, 2004). If the poor differentiation between guilt and shame scales seen in the SSGS resulted in a lack of sensitivity necessary to detect self-behavior differences in autobiographical writing responses, it is possible that the study results may have been impacted.

Limitations

Potential limitations with regard to sample characteristics, novelty and features of the manipulation utilized in the study, COVID-related considerations, and difficulties arising with web-based experiments, are reviewed above. In addition to these contextual limits, a frequently cited issue in emotion research is the reliability of single emotion inductions (Mills & D'Mello, 2014). Broader assessments of non-target variables and other domains of negative affect following shame and guilt inductions may facilitate greater accuracy and “fine-tuning” of such prompts. Further, it is unclear at this time if the SSGS’s balance of opacity and face validity may necessitate revision. Additionally, explicit reference to behavior was not included in the SSGS, meaning that Lewis’s self-behavior distinction may not be adequately captured by the measure (Tangney & Dearing, 2004).

Conclusions

Although not supported in this study, the development of a method that separately evokes shame versus guilt via standardized environmental/contextual factors, proctored delivery to minimize dilution of the manipulation, and a more specific, adapted shame-guilt measure, may allow for precise evaluations of shame versus guilt states. Accurate inductive parsing of shame and guilt may clarify the potential causal role of shame, more than guilt, in relation to psychopathology and worsened outcomes, and provide a fruitful next step in improving clinical efficacy across shame-laden populations.

References

- Anolli, L., & Pascucci, P. (2005). Guilt and guilt-proneness, shame and shame-proneness in Indian and Italian young adults. *Personality and Individual Differences, 39*, 763–773. doi:10.1016/j.paid.2005.03.004
- Austin, D.W., & Richards, J.C. (2001). The catastrophic misinterpretation model of panic disorder. *Behaviour Research and Therapy, 39*, 1277–1291. doi:10.1016/S0005-7967(00)00095-4
- Babcock, M. K., & Sabini, J. (1990). On differentiating embarrassment from shame. *European Journal of Social Psychology, 20*, 151–169. doi:10.1002/ejsp.2420200206
- Birnbaum, M. H. (2004). Human Research and Data Collection via the Internet. *Annual Review of Psychology, 55*, 803–832. doi:10.1146/annurev.psych.55.090902.141601
- Boyd, R. L., Ashokkumar, A., Seraj, S., & Pennebaker, J. W. (2022). *The development and psychometric properties of LIWC-22*. Austin, TX: University of Texas at Austin
- Campos, J.J. (1995). Foreword. In J.P. Tangney & K.W. Fischer (Eds.), *Self-conscious emotions: The psychology of shame, guilt, embarrassment, and pride* (pp. ix–xi). New York: Guilford Press.
- Candea, D. M., & Szentagotai-Tăta, A. (2018). Shame-proneness, guilt-proneness and anxiety symptoms: A meta-analysis. *Journal of Anxiety Disorders, 58*, 78–106. doi:10.1016/j.janxdis.2018.07.005
- Cavalera C, Anolli L (2013) The enigma of blushing. *Giornale Italiano di Psicologia, 40*, 155–174. doi:10.1421/73989
- Cavalera, C., & Pepe, A. (2014). Social emotions and cognition: shame, guilt and working memory. *Procedia-Social and Behavioral Sciences, 112*, 457–464. doi:10.1016/j.sbspro.2014.01.1189
- Cavalera, C., Pepe, A., Zurloni, V., Diana, B., & Realdon, O. (2017). A short version of the State Shame and Guilt Scale (SSGS-8). *TPM–Testing, Psychometrics, Methodology in Applied Psychology, 24*, 99–106. doi:10.4473/TPM24.1.6
- Cavalera, C., Pepe, A., Zurloni, V., Diana, B., Realdon, O., Todisco, P., ... & Pagnini, F. (2018). Negative social emotions and cognition: Shame, guilt and working memory impairments. *Acta Psychologica, 188*, 9–15. doi:10.1016/j.actpsy.2018.05.005
- Cavalera, C., Pepe, A., Zurloni, V., Diana, B., Realdon, O., Todisco, P., ... & Pagnini, F. (2018). Negative social emotions and cognition: Shame, guilt and working memory impairments. *Acta Psychologica, 188*, 9–15. doi:10.1016/j.actpsy.2018.05.005
- Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment, 6*, 284–290. doi:10.1037/1040-3590.6.4.284
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. A. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Cohen, T. R., Panter, A. T., & Turan, N. (2012). Guilt proneness and moral character. *Current Directions in Psychological Science, 21*, 355–359. doi:10.1177/0963721412454874
- Cohen, T. R., Wolf, S. T., Panter, A. T., & Insko, C. A. (2011). Introducing the GASP scale: A new measure of guilt and shame proneness. *Journal of Personality and Social Psychology, 100*, 947–966. doi:10.1037/a0022641
- De Hooge, I. E., Zeelenberg, M., & Breugelmans, S. M. (2007). Moral sentiments and cooperation: Differential influences of shame and guilt. *Cognition and emotion, 21*, 1025–1042. doi:10.1080/02699930600980874
- Epstein, S. (1980). The self-concept: A review and the proposal of an integrated theory of personality. In E. Staub (Ed.), *Personality: Basic aspects and current research* (pp. 82–132). Englewood Cliffs, NJ: Prentice Hall.
- Erdfelder, E., Faul, F., & Buchner, A. (1996). G*Power: A general power analysis program. *Behavior Research Methods, Instruments, & Computers, 28*, 1–11. doi:10.3758/BF03203630
- Fergus, T. A., & Valentiner, D. P. (2012). Terror management theory and scrupulosity: An experimental investigation. *Journal of Obsessive-Compulsive and Related Disorders, 1*, 104–111. https://doi.org/10.1016/j.jocrd.2012.01.003
- Fergus, T. A., Valentiner, D. P., McGrath, P. B., & Jencius, S. (2010). Shame- and guilt-proneness: relationships with anxiety disorder symptoms in a clinical sample. *Journal of Anxiety Disorders, 24*, 811–815. doi:10.1016/j.janxdis.2010.06.002
- Gino, F., Ayal, S., & Ariely, D. (2013). Self-serving altruism? The lure of unethical actions that benefit others. *Journal of Economic Behavior & Organization, 93*, 285–292. doi:10.1016/j.jebo.2013.04.005
- Göriz, A. S., & Moser, K. (2006). Web-based mood induction. *Cognition & Emotion, 20*, 887–896. doi:10.1080/02699930500405386
- Gross, D., Gu, B., & Soland, R. M. (1993). Iterative solution methods for obtaining the steady-state probability distributions of Markovian multi-echelon repairable item inventory systems. *Computers & Operations Research, 20*, 817–828. doi:10.1016/0305-0548(93)90103-P
- Harder, D. H., & Zalma, A. (1990). Two Promising Shame and Guilt Scales: A Construct Validity Comparison. *Journal of Personality Assessment, 55*, 729–745. doi:10.1080/00223891.1990.9674108
- Held, P., Owens, G. P., & Anderson, S. E. (2015). The interrelationships among trauma-related guilt and shame, disengagement coping, and PTSD in a sample of treatment-seeking substance users. *Traumatology, 21*, 285–292. doi:10.1037/trm0000050

- Janoff-Bulman, R. (1979). Characterological versus behavioral self-blame: Inquiries into depression and rape. *Journal of Personality and Social Psychology*, *37*, 1798–1809. doi:10.1037/0022-3514.37.10.1798
- John, O. P., & Benet-Martínez, V. (2000). Measurement: Reliability, construct validation, and scale construction. In H. T. Reis & C. M. Judd (Eds.), *Handbook of Research Methods in Social and Personality Psychology* (p. 339–369). Cambridge University Press. doi:10.4236/ce.2014.523222
- Joireman, J. (2004). Empathy and the self-absorption paradox II: Self-rumination and self-reflection as mediators between shame, guilt, and empathy. *Self and Identity*, *3*, 225–238. doi:10.1080/13576500444000038
- Kim, J., & McMillan, S. J. (2008). Evaluation of internet advertising research: A bibliometric analysis of citations from key sources. *Journal of Advertising*, *37*, 99–112. doi:10.2753/JOA0091-3367370108
- Kučera, D., & Haviger, J. (2012). Using mood induction procedures in psychological research. *Procedia - Social and Behavioral Sciences*, *69*, 31–40. doi:10.1016/j.sbspro.2012.11.380
- Leith, K. P., & Baumeister, R. F. (1998). Empathy, shame, guilt, and narratives of interpersonal conflicts: Guilt-prone people are better at perspective taking. *Journal of Personality*, *66*, 1–37. doi:10.1111/1467-6494.00001
- Lewis, H. B. (1971). Shame and guilt in neurosis. *Psychoanalytic Review*, *58*, 419–438. doi:10.4135/9781452224909
- Lewis, M., Stanger, C., Sullivan, M. W., & Barone, P. (1991). Changes in embarrassment as a function of age, sex and situation. *British Journal of Developmental Psychology*, *9*, 485–492. doi:10.1111/j.2044-835X.1991.tb00891.x
- Marcusson-Clavertz, D., Kjell, O. N. E., Persson, S. D., & Cardeña, E. (2019). Online validation of combined mood induction procedures. *PLOS ONE*, *14*, e0217848. doi:10.1371/journal.pone.0217848
- Marschall, D., Sanftner, J., & Tangney, J. P. (1994). The State Shame and Guilt Scale. Fairfax, VA: George Mason University.
- Martin, M. (1990). On the induction of mood. *Clinical Psychology Review*, *10*, 669–697. doi:10.1016/0272-7358(90)90075-L
- Matsumoto, D., Yoo, S. H., Fontaine, J., Anguas-Wong, A. M., Arriola, M., Ataca, B., Bond, M. H., Boratav, H. B., Breugelmans, S. M., Cabecinhas, R., Chae, J., Chin, W. H., Comunian, A. L., Degere, D. N., Djunaidi, A., Fok, H. K., Friedlmeier, W., Ghosh, A., Glamcevski, M., & Granskaya, J. V. (2008). Mapping expressive differences around the world: The relationship between emotional display rules and individualism versus collectivism. *Journal of Cross-Cultural Psychology*, *39*, 55–74. doi:10.1177/0022022107311854
- Mesquita, B. (2001). Emotions in collectivist and individualist contexts. *Journal of Personality and Social Psychology*, *80*, 68–74. doi:10.1037/0022-3514.80.1.68
- Mills, C., & D’Mello, S. (2014). On the Validity of the Autobiographical Emotional Memory Task for Emotion Induction. *PLOS ONE*, *9*, e95837. doi:10.1371/journal.pone.0095837
- O’Connor, L. E., Berry, J. W., & Weiss, J. (1999). Interpersonal guilt, shame, and psychological problems. *Journal of Social and Clinical Psychology*, *18*, 181–203. doi:10.1521/jscp.1999.18.2.181
- Pineles, S. L., Street, A. E., & Koenen, K. C. (2006). The differential relationships of shame-proneness and guilt-proneness to psychological and somatization symptoms. *Journal of Social and Clinical Psychology*, *25*, 688–704. doi:10.1521/jscp.2006.25.6.688
- Polivy, J. (1981). On the induction of emotion in the laboratory: Discrete moods or multiple affect states? *Journal of Personality and Social Psychology*, *41*, 803–817. doi:10.1037/0022-3514.41.4.803
- Rimé, B., Mesquita, B., Boca, S., & Philippot, P. (1991). Beyond the emotional event: Six studies on the social sharing of emotion. *Cognition and Emotion*, *5*, 435–465. doi:10.1080/02699939108411052
- Schauberg, R. L., & Flynn, F. J. (2012). Uneasy lies the head that wears the crown: The link between guilt proneness and leadership. *Journal of Personality and Social Psychology*, *103*, 327–342. doi:10.1037/a0028127
- Schmitt, N. (1996). Uses and abuses of coefficient alpha. *Psychological Assessment*, *8*, 350–353. doi:10.1037/1040-3590.8.4.350
- Serdar, C. C., Cihan, M., Yücel, D., & Serdar, M. A. (2021). Sample size, power and effect size revisited: simplified and practical approaches in pre-clinical, clinical and laboratory studies. *Biochemia Medica*, *31*, 27–53. doi:10.11613/BM.2021.010502
- Sheikh, S., & Janoff-Bulman, R. (2010). The “shoulds” and “should nots” of moral emotions: A self-regulatory perspective on shame and guilt. *Personality and Social Psychology Bulletin*, *36*, 213–224. doi:10.1177/0146167209356788
- Tangney, J. P. (1996). Conceptual and methodological issues in the assessment of shame and guilt. *Behaviour Research and Therapy*, *34*, 741–754. doi:10.1016/0005-7967(96)00034-4
- Tangney, J. P. (1992). Situational determinants of shame and guilt in young adulthood. *Personality and Social Psychology Bulletin*, *18*, 199–206. doi:10.1177/0146167292182011
- Tangney, J. P. (Ed.). (2012). Self-conscious emotions. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 446–478). The Guilford Press.
- Tangney, J. P., & Dearing, R. L. (2002). *Shame and guilt*. Guilford Press. doi:10.4135/9781412950664.n388
- Tangney, J. P., Stuewig, J., & Mashek, D. J. (2007). Moral emotions and moral behavior. *Annual Review of Psychology*, *58*, 345–372. doi:10.1146/annurev.psych.56.091103.070145
- Tracy, J. L., & Robins, R. W. (2004). Putting the self into self-conscious emotions: A theoretical model. *Psychological Inquiry*, *15*, 103–125. doi:10.1207/s15327965pli1502_01
- Turner, J. E. (2014). Researching state shame with the Experiential Shame Scale. *The Journal of Psychology*, *148*, 577–601. doi:10.1080/00223980.2013.818927
- Weingarden, H., & Renshaw, K. D. (2015). Shame in the obsessive compulsive related disorders: A conceptual review. *Journal of Affective Disorders*, *171*, 74–84. doi:10.1016/j.jad.2014.09.010
- Yang, M. L., Yang, C. C., & Chiou, W. B. (2010). When guilt leads to other orientation and shame leads to egocentric self-focus: Effects of differential priming of negative affects on perspective taking. *Social Behavior and Personality: An International Journal*, *38*, 605–614. doi:10.2224/sbp.2010.38.5.605
- Zurloni, V., Diana, B., Cavalera, C., Argenton, L., Elia, M., & Mantovani, F. (2015). Deceptive behavior in doping related interviews: The case of Lance Armstrong. *Psychology of Sport and Exercise*, *16*, 191–200. doi:10.1016/j.psychsport.2014.02.008

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