

**Emotional Compatibility and the Effectiveness of Anti-Drinking Messages:  
A Defensive Processing Perspective on Shame and Guilt**

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## **Emotional Compatibility and the Effectiveness of Anti-Drinking Messages:**

### **A Defensive Processing Perspective on Shame and Guilt**

Five studies examine how the two distinct emotional states of shame and guilt influence the effectiveness of messages that highlight socially undesirable consequences of alcohol consumption. Appeals that frame others as observing versus suffering the negative consequences of binge drinking differentially activate shame and guilt. Given these emotional consequences of message framing, the authors examine the interaction between incidental shame or guilt and message framing on drinking intentions and behavior. Compatible appeals (i.e., appeals that elicit the same emotion as being incidentally experienced by the consumer) are less effective in influencing behavioral intentions and beverage consumption, due to a process in which consumers discount the possibility that they may cause the negative consequences outlined in the message. Such defensive processing of compatible messages is driven by a desire to reduce the existing negative emotion.

Keywords: emotions, motivated reasoning, defensive processing, health and public service, advertising and persuasion

Consumer research in recent years has explored how emotional experiences impact attitudes and behaviors. Most early research focused on the role of valenced affective states (e.g., good vs. bad mood). Recent research, which has begun to examine the role of specifically defined emotional states, suggests that consumers experiencing two emotional states that are negatively valenced (e.g., anxiety vs. anger) might process information differently (Agrawal, Menon, and Aaker 2007; Zemack-Rugar, Bettman, and Fitzsimons 2007).

Emotions may affect information processing via two conceptually distinct paths. First, features of a message might lead us to experience certain emotions, which subsequently influence our judgments. Second, emotional states may influence judgment when the onset of the emotion is incidental to the message (Tiedens and Linton 2001). Most research has focused on examining either message-induced emotions or the effect of incidental emotions. The notion that message-induced emotions may interact with incidental emotions to determine behavior has not received adequate attention. Such interactive effects might be especially pronounced for negative emotions where individuals are highly motivated to repair their undesirable emotional states. Building on past research on specific emotions, mood repair, and motivated reasoning, we examine how consumers experiencing the specific negative emotions of shame or guilt might respond to messages that induce additional shame or guilt. We believe these emotional states are distinct from other negative emotions in that they cast the self in a negative role. Hence, we posit that consumers engage in defensive processing to alleviate these self-referential negative states.

Shame and guilt have been termed self-conscious emotions due to the fact that they frequently involve perceptions of the self. These self-conscious emotions may be particularly persuasive tools for reducing harmful behaviors, such as binge and underage drinking, because these emotions often carry extremely strong personal implications. Little research has examined

how feeling shame and guilt may impact the persuasive efficacy of public-service messages. We test conditions that foster or hinder the effectiveness of anti-drinking messages. The present research hypothesizes that shame- and guilt-inducing frames will be differentially effective as a function of the compatibility between an individual's incidental emotional state and the emotion evoked by the ad frame. We demonstrate that for individuals experiencing shame (guilt), subsequent exposure to a shame-inducing (guilt-inducing) anti-drinking message will be less persuasive whereby the compatible message leads to significantly greater intentions to binge drink. We posit that these effects will be driven by defensive processing of the messages. We next review the emotions literature related to shame, guilt, and message framing.

### *MESSAGE FRAMING AND FEELINGS OF SHAME AND GUILT*

#### *Types of Other Referent Frames Systematically Affect Shame and Guilt*

Recent research suggests that shame and guilt share several characteristics that would suggest similar consequences for judgment and processing. For instance, they are both negative emotions and thus share a negative valence appraisal. Both emotions are unpleasant states, and individuals are motivated to eliminate them. In addition, shame and guilt are both related to interpersonal contexts and yet both are self-conscious (i.e., self-referential) emotions (Tangney and Dearing 2002). Both emotions focus on the role of the self within a broader social context that frequently involves moral/social transgressions, and both can be experienced in public as well as private settings (Tracy and Robins 2006). Finally, both emotions lead individuals to see themselves as agents of socially undesirable outcomes. Shame and guilt are negative states, with this negativity often attributed to aspects of the self that produced the emotion (Tangney 1995).

However, these emotions differ on other appraisal dimensions. Shame and guilt differ on their concern vis-à-vis others (Lindsey-Hartz, DeRivera, and Mascolo 1995). Shame arises out of a concern with others' evaluations of oneself. Shame may be experienced when the self is viewed through the eyes of another and one realizes that behaviors producing the emotion are not congruous with one's ideal self. In contrast, guilt is concerned with the effect of one's actions on others (Baumeister, Stilwell, and Heatherton 1994; Tangney 1995). Guilt may be experienced when one realizes that one is responsible for behaviors that have caused a violation such that another has been harmed (Lindsey-Hartz, DeRivera, and Mascolo 1995). These differences have important consequences for information processing and message framing.

Thoughts or situations (e.g., thinking that others might suffer due to one's actions) that are consistent with the appraisals of an emotion (e.g., guilt) lead us to experience that emotion (e.g., guilt; Smith and Ellsworth 1985)). Thus, considering the role of others as either observers or sufferers of one's undesirable actions will lead to the onset of shame or guilt, respectively. Specifically, we theorize that ad frames that accentuate the role of others as observers of the negative consequences of one's drinking should induce shame. Ad frames that accentuate the role of others as sufferers of the negative consequences of one's drinking should induce guilt.

#### *Pilot Study: Message Frames Induce Guilt and Shame*

To determine if differences in the way others are invoked differentially affects shame and guilt responses, we manipulated two roles played by others (observers vs. sufferers of negative consequences) in anti-drinking advertisements and measured participants' emotional responses. This experiment had a 3 (ad frame: observe vs. suffer vs. no ad control) x 2 (measured emotion: shame vs. guilt) between-subjects design. We modeled the control condition to establish baseline levels of shame and guilt. Seventy-five participants were randomly exposed to anti-drinking ads

that manipulated whether others were framed as observers or sufferers of the consequences of drinking. To develop the focal ad, we modified an actual PSA ad from a responsible drinking campaign (see Appendix for pilot study ads).<sup>1</sup> Note here that the focal ads did not feature the words *shame* or *guilt*. After viewing the ad, participants rated either the extent of guilt or the extent of shame that they experienced, using five-point Likert scales. In the control condition, participants completed the emotions measures without reading the ad. The emotions measures were adapted from Zemack-Rugar (2008) and consisted of three guilt (guilt-ridden, culpable, remorseful,  $\alpha = .89$ ) and three shame items (embarrassed, ashamed, humiliated,  $\alpha = .92$ ). As expected, we observed a significant ad frame by emotion interaction ( $F(2, 74) = 5.59, p < .05$ ). The “others as observers” frame led to greater feelings of shame than the “others as sufferers” frame or the no-ad control ( $M_{\text{observe}} = 3.56, M_{\text{suffer}} = 2.80; F(1, 74) = 3.82, p = .05; M_{\text{control}} = 2.07; F(1, 74) = 15.15, p < .05$ ). The “others as sufferers” frame led to greater feelings of guilt than did the “others as observers” frame or the control ( $M_{\text{suffer}} = 3.88, M_{\text{observe}} = 2.88; F(1, 74) = 4.33, p < .05; M_{\text{control}} = 2.59; F(1, 74) = 7.45, p < .05$ ).

The pilot study showed that messages that frame others as the sufferers of negative consequences of one’s drinking increased feelings of guilt relative to a control group and relative to a message that framed others as the observers of the negative consequences of one’s drinking. In contrast, a message that framed others as the observers of the negative consequences of one’s drinking increased feelings of shame relative to a control group and relative to a message that framed others as the sufferers of the negative consequences of one’s drinking. Subsequently, for ease of communication, we will refer to the “others as sufferers” frame as a guilt-compatible frame and the “others as observers” frame as a shame-compatible frame. Building on these empirical findings, we next turn to our central theorizing on the effects of compatibility between

a consumer's incidental emotional state and the message-induced emotion on consumer information processing and message effectiveness.

*EMOTION COMPATIBILITY:*

*INCIDENTAL EMOTION STATES, AD FRAMES, AND MESSAGE EFFECTIVENESS*

Consider a consumer who has been watching a television show that causes feelings of guilt and who then views an ad against binge drinking that induces more guilt. Or consider a consumer who experiences shame as a result of attending an alcohol treatment program in which she is given informational materials that are designed to induce additional shame. Such instances are characterized by compatibility between consumers' incidental emotional state and the emotional state aroused by the message. Past research suggests that incidental emotions influence the processing of subsequent unrelated messages. However, there is little insight on how incidental emotions may interact with message-induced emotion. We investigate how consumers process emotion-compatible ads given their need to reduce the unpleasant emotions of shame and guilt. We directly examine whether shame-inducing (guilt-inducing) ad frames are more effective for consumers already experiencing shame (guilt), as compared to incompatible ad frames that elicit another negative emotion. Next, we review the literature suggesting how such messages might affect persuasion in the unique context of shame and guilt.

Past persuasion research is equivocal as to how compatibility may impact message processing. Some evidence suggests that compatible ad frames foster greater processing than incompatible frames (DeSteno et al. 2004; Petty and Wegener 1998). Compatible ad frames may bear greater personal relevance given the resonance between ad-induced emotion states and

consumers' incidental emotional states, further facilitating processing of the message. According to this account, compatible ad frames should increase persuasion. Following similar arguments in the domain of emotions, DeSteno et al. (2004) found that people were more persuaded by emotion-compatible information.

A countervailing logic detailed in past research on negative emotions suggests that compatible message frames would be less persuasive than incompatible message frames. Individuals in a negative mood state have been shown to guard their already negative mood against further deterioration (Ragunathan and Trope 2002) and resist negative self-evaluation. It has been further shown that individuals not only guard against their negative mood but also specifically guard against the discrete negative emotion that they are feeling (Agrawal, Menon, and Aaker 2007; Zemack-Rugar 2008). Compatible messages lead people to feel more of the previously experienced negative emotion; thus compatible messages may be less persuasive because individuals are motivated to repair their negative emotion, not exacerbate it by accepting the message. The typical means through which these effects are explained rely on an emotional overload account. According to this account, compatibility results in an overload of negative emotions that drives individuals to shut down and avoid processing the message (Agrawal, Menon, and Aaker 2007). In the current research, we identify a new mechanism operating in the context of the self-conscious emotions of shame and guilt based on defensive processing.

#### *Compatibility and Persuasion*

We believe the unique context surrounding the use of shame and guilt appeals in advertising suggests that compatible frames will be less persuasive. Because shame and guilt are negative self-referential emotion states that individuals are highly motivated to repair, we hypothesize that compatible appeals will be less persuasive than incompatible appeals.

Specifically, we predict that individuals experiencing shame (guilt) are likely to guard against information that may induce more shame (guilt). Thus, these individuals are likely to resist the shame-inducing (guilt-inducing) message frame to avoid exacerbating their negative emotion. Since the guilt-inducing appeals are not likely to exacerbate shame and the shame-inducing appeals are not likely to increase guilt, we predict that shame-laden individuals will not resist the guilt-inducing appeal and guilt-laden individuals will not resist the shame-inducing appeal. Specifically, we predict that compatible frames, where the ad-induced emotion matches the incidental emotion being experienced by the individual, generate defensive processing and are consequently less effective than incompatible frames. Our primary hypothesis is as follows:

**H1:** For individuals experiencing incidental shame or guilt, compatible message frames will be less persuasive than incompatible message frames.

Note here that our predictions of why compatible appeals are less persuasive follows from the assertion that individuals already feeling a negative emotion (e.g., shame or guilt) will resist the compatible appeal that is likely to exacerbate that emotion. However, if individuals are in a neutral emotional state and thus do not have an emotion-repair goal, they should have no reason to defensively process a shame- or guilt-inducing appeal. Therefore, not only is a compatible appeal likely to be less persuasive than an incompatible appeal, but it should also be less persuasive than a message processed by individuals not experiencing a negative emotion (i.e., a no-emotion-prime control condition). In essence, our defensive processing account predicts that compatibility induces a backfire effect such that compatible appeals are less persuasive than incompatible appeals or the control condition.

#### *Compatibility-Driven Defensive Processing*

Shame and guilt are negative states that implicate the self as the cause of negative

consequences. Because of the negative self-inferences emerging from the experience of these negative emotions, an involved process that rids the self of shame or guilt associations is more likely to help reduce these negative emotions. Compatibility-driven relevance is also likely to enhance elaboration, prompting biased or defensive processing of an emotion-exacerbating message. Thus, we hypothesize a distinct defensive processing mechanism through which compatibility reduces the effectiveness of shame- and guilt-inducing anti-drinking appeals. We posit that this defensive processing mechanism will manifest in three notable ways.

First, defensive processing results in distorted perceptions of one's susceptibility to the negative consequences associated with drinking. Individuals engaged in defensive processing may believe that others are susceptible to the negative consequences of drinking while believing that they themselves are somehow inoculated against such consequences (Menon, Kyung, and Agrawal forthcoming). This effect arises from an individual's desire to arrive at a preferred conclusion, namely that her actions will not lead to additional shame or guilt. In the case of shame and guilt, the implication of the compatible appeal for the self is highly undesirable, and thus individuals are motivated to discount it. This discounting effect should be operative only in conditions that are self-relevant. In contrast, thinking about the susceptibility of others to the negative consequences of drinking should conform to the usual pattern whereby compatibility enhances persuasion. Specifically, we hypothesize the following:

**H2a:** For individuals experiencing incidental shame or guilt, compatible message frames will be more persuasive than incompatible frames when making judgments about others (e.g., considering the drinking likelihood of others).

Second, we predict that this process results in a greater vigilance to attend to the message. We argued earlier that shame and guilt are self-referential negative emotions that cast the self in

a negative light. Hence, when faced with a message that enhances these emotions (i.e., compatible message), individuals are likely to discount this message through an involved form of defensive processing. If shame and guilt are resolved by defensively processing a compatible message rather than ignoring it, we would expect the compatible message to be processed in greater depth. As a result, increased processing should lead to greater recall of the message. This prediction is in sharp contrast to the commonly advanced view of negative emotional appeals causing emotional overload that leads to ignoring aversive messages; this view postulates that emotional overload inhibits the processing of an aversive message and leads to lower recall. In support of elaborate but defensive processing, we predict the following:

**H2b:** For individuals experiencing incidental shame or guilt, compatible (vs. incompatible) message frames will be processed more elaborately and result in greater recall of the message.

Finally, we posit that defensive processing is employed as a means of emotional repair directed at reducing the undesirable emotions of shame and guilt. We argue that the compatible appeals condition drives a need to actively reduce one's negative emotional state. Consequently, individuals engaged in defensive processing activated by compatibility should report significantly more emotional repair (i.e., reduction in the relevant negative emotion) compared with those in incompatible conditions. This prediction also runs counter to an emotional overload explanation, which would predict that individuals in the compatible conditions would have significantly more shame and guilt upon exposure to the ad than in incompatible conditions.

**H2c:** For individuals experiencing incidental shame or guilt, compatible message frames will lead to a greater decrease in the initial emotion than incompatible message frames.

### *Overview of Studies*

These four propositions related to compatibility are tested in five studies. In each study, participants are first primed with shame or guilt in an unrelated task. They are then exposed to either the shame-inducing or guilt-inducing anti-drinking messages described in the pilot study earlier. Next, the relevant measures of persuasion, emotion, and processing are collected. Study 1 tests the backfire effect of compatibility on drinking intentions as well as provides evidence of defensive processing by measuring drinking intentions for the average peer (H2a). Study 2 shows that the effects of compatibility replicate on actual beverage consumption and provides additional measures of defensive processing. To provide evidence of ecological validity, study 3 manipulates incidental shame and guilt using advertising messages prior to exposure to the anti-drinking message. Process measures such as recall (H2b) and emotions after exposure to the ad frame (H2c) are collected to provide additional convergent evidence for our theorizing based on defensive processing. Study 4 is designed to more directly test for emotional repair after exposure to the compatible message (H2c). Study 5 uses measures of participants' chronic tendency to feel shame or guilt and replicates the effects of compatibility.

#### *STUDY 1: EMOTION-COMPATIBLE MESSAGES ARE LESS PERSUASIVE AND LEAD TO DEFENSIVE PROCESSING*

The objective of study 1 is to examine the relationship between experienced shame and guilt and anti-drinking public service messages that frame others in different ways with respect to the consequences of risky drinking behaviors. Our key overarching theoretical prediction is that compatibility between consumer emotions and ad framing will decrease the effectiveness of

advertising (H1). We predict that the compatibility between incidental guilt and the guilt-inducing others as sufferers frame will lead to a significantly higher likelihood to engage in risky drinking behaviors. Likewise, the compatibility between shame and the shame-inducing others as observers frame will lead to a significantly higher likelihood to engage in risky drinking behaviors. Thus, study 1 is a 3 (incidental emotion: shame vs. guilt vs. neutral) by 2 (ad frame: shame-compatible observer vs. guilt-compatible sufferer) between-subjects design. The presence of the control condition allows us to test whether compatibility has a backfire effect on persuasion or whether incompatibility produces an increase in persuasion. We also examine drinking likelihood for the average peer to assess the defensive process through which these compatibility effects occur (H2a).

### *Procedure*

Four hundred seventy-eight undergraduate students participated in the study. Participants were first randomly assigned to an emotional recall task where they were asked to recall an emotional episode in which they experienced extreme shame (guilt). They were instructed to write in detail their thoughts and feelings related to this episode (Tiedens and Linton 2001). In the neutral emotion condition, participants were asked to describe in detail the tasks, events, and behaviors they engage in during a typical day. As described in the pilot study, shame and guilt were measured to gauge the effectiveness of this manipulation.

After this narrative task to manipulate shame or guilt, participants were told that they would evaluate several advertisements. Participants then viewed the anti-drinking ad manipulating whether the appeal cast peers as observers or sufferers of consequences. After viewing the ad, participants were given a filler task as part of an unrelated study. After the filler task, participants completed the focal behavioral intention measure embedded in a survey

ostensibly designed to assess the habits of college students. A seven-point Likert scale item (1 = much less, 7 = much more) assessed the likelihood that participants would engage in binge drinking (“Compared to last year, how often do you plan to binge drink this year?”). Following this measure was a similar measure of how likely participants thought the average undergraduate student was to indulge in binge drinking in the coming year.

### *Results and Discussion*

*Manipulation check.* We first examine the effectiveness of the incidental emotion prime. Offering evidence of the effectiveness of the manipulation, participants exposed to the guilt (vs. shame or neutral) manipulation reported significantly more guilt ( $M_{\text{guilt}} = 4.01$  vs.  $M_{\text{shame}} = 3.30$ ;  $F(1, 477) = 16.93, p < .001$ ;  $M_{\text{guilt}} = 4.01$  vs.  $M_{\text{neutral}} = 2.01$ ;  $F(1, 477) = 141.74, p < .001$ ) whereas those exposed to the shame (vs. guilt or neutral) manipulation reported significantly more shame ( $M_{\text{shame}} = 4.00$  vs.  $M_{\text{guilt}} = 3.14$ ;  $F(1, 477) = 30.87, p < .001$ ;  $M_{\text{shame}} = 4.00$  vs.  $M_{\text{neutral}} = 1.94$ ;  $F(1, 477) = 186.24, p < .001$ ). Next, we test the prediction that compatibility between the ad frame and emotion state decreases persuasion, resulting in significantly greater intentions to binge drink.

*Binge drinking intentions.* In support of our primary prediction, only the emotion by ad framing interaction was significant (see table 1;  $F(2, 474) = 10.98, p < .001$ ). Examination of planned contrasts to better understand the nature of this effect offers support for our theorized predictions. First, participants experiencing shame exposed to the shame-compatible others as observers ad frame reported significantly greater intentions to binge drink than shame-laden participants exposed to the guilt-compatible others as sufferers frame ( $M_{\text{suffer}} = 3.67, M_{\text{observe}} = 4.26$ ;  $F(1, 474) = 9.24, p < .01$ ;  $\omega^2 = .02$ ). Comparing those primed with shame to the neutral control condition, we observe a significant difference such that those in the shame-compatible

conditions report a significantly greater intention to binge relative to the control group ( $M_{\text{shame-observe}} = 4.26$ ,  $M_{\text{neutral-observe}} = 3.78$ ;  $F(1, 474) = 7.05$ ,  $p < .01$ ;  $\omega^2 = .01$ ). There was no difference between the shame-incompatible group and the control group ( $F(1, 474) = .32$ ,  $p > .57$ ).

Likewise for guilt-laden participants, exposure to the guilt-compatible others as sufferers frame resulted in significantly greater intentions to binge drink than exposure to the shame-compatible others as observers frame ( $M_{\text{suffer}} = 4.33$ ,  $M_{\text{observe}} = 3.66$ ;  $F(1, 474) = 12.42$ ,  $p < .005$ ;  $\omega^2 = .02$ ). Comparing those primed with guilt to the neutral control condition, we observe a significant difference ( $M_{\text{guilt-suffer}} = 4.33$ ,  $M_{\text{neutral-suffer}} = 3.88$ ;  $F(1, 474) = 5.67$ ,  $p < .05$ ;  $\omega^2 = .01$ ) such that those in the guilt-compatible group reported significantly greater intentions to binge. There was no difference between the guilt-incompatible condition and the control condition ( $F(1, 474) = 1.27$ ,  $p > .25$ ).

--Insert table 1 here--

*Binging estimates for the average student.* To support for our theoretical account based on a defensive processing mechanism due to high personal threat, we examine drinking estimates once personal threat is removed. Thus, we asked participants to rate the likelihood that the average university undergraduate would binge drink. We find a significant emotion by ad frame interaction ( $F(2, 474) = 5.36$ ,  $p < .005$ ). Participants experiencing shame reported that the average undergraduate was significantly less likely to binge drink when exposed to the shame-compatible others as observers frame as compared to those exposed to the others as sufferers frame ( $M_{\text{shame-suffer}} = 5.21$ ,  $M_{\text{shame-observe}} = 4.77$ ;  $F(1, 474) = 4.44$ ,  $p < .05$ ;  $\omega^2 = .01$ ). Comparing the shame-compatible and the neutral control conditions, we observe a significant difference such that those exposed to the shame-compatible conditions reported that others were

significantly less likely to engage in binge drinking ( $M_{\text{shame-observe}} = 4.77$ ,  $M_{\text{neutral-observe}} = 5.14$ ;  $F(1, 474) = 3.61$ ,  $p = .058$ ;  $\omega^2 = .01$ ). There was no difference between the shame-incompatible group and the control group ( $F(1, 474) = .11$ ,  $p > .73$ ).

Likewise for guilt-laden participants, exposure to the guilt-compatible others as sufferer frame resulted in significantly lower estimates of the average undergraduate binge drinking as compared to the others as observer frame ( $M_{\text{guilt-suffer}} = 4.56$ ,  $M_{\text{guilt-observe}} = 5.08$ ;  $F(1, 474) = 6.37$ ,  $p < .01$ ;  $\omega^2 = .01$ ). Comparing the guilt-compatible condition with the neutral control condition, we observe a significant difference ( $M_{\text{guilt-suffer}} = 4.56$ ,  $M_{\text{neutral-suffer}} = 5.07$ ;  $F(1, 474) = 6.08$ ,  $p < .05$ ;  $\omega^2 = .01$ ) such that those in the guilt-compatible group reported that others were significantly less likely to binge, indicating that the ad was effective when the context was non-threatening and removed from the self. There was no difference between the guilt-incompatible group and the control group ( $F(1, 474) = .01$ ,  $p > .94$ ). These results support H2a.

*Examining a rival explanation based on reactance.* One possible alternative explanation to the reported data does not rely on a rationale based on defensive processing due to personal threat. A reactance-based explanation suggests that individuals in the compatible conditions drink more due to a perceived loss of freedom caused by the matching between their own emotional state and that initiated by the ad. To examine this possibility, we collected measures of reactance using Hong's (1992) ten-item trait-based reactance measure ( $\alpha = .99$ ) for half of the participants. If reactance were accountable for the effects observed, then we would expect to find that our hypothesized interaction for binge intentions would not be significant in the presence of the interaction term. A reactance-based explanation would also gain credence if the reactance covariate were significantly related to the drinking intentions measure for both the self and for others. Examining the self intentions binge measure, we observe both a significant ad frame by

emotion interaction in the presence of the reactance covariate ( $F(1, 216) = 8.65, p < .01$ ) and a lack of significance for the reactance measure ( $F(1, 216) = 2.95, p = .09$ ). Examining the measure of others' drinking intentions, we observe a significant ad frame by emotion interaction while controlling for reactance ( $F(1, 216) = 8.22, p < .005$ ) and a lack of significance for the reactance covariate ( $F(1, 216) = 1.87, p = .18$ ). The simple effects of the ad frame are significant for both shame and guilt in the presence of the reactance measure for both the self and others binge intentions measure. Thus, reactance cannot fully explain the pattern of results.

*Discussion.* Study 1 established that the compatibility between shame or guilt and message framing produces a backfire effect on persuasion such that those individuals exposed to the compatible conditions reported an increased intention to binge drink relative to those exposed to incompatible or control conditions. We explain this backfire effect as being due to defensive processing. Study 1 provides evidence in support of a defensive message processing account whereby individuals in compatible conditions think others should not be binge drinking, thus demonstrating increased persuasion in compatible conditions when personal threat is removed. We posit that compatibility induces significant defensiveness when individuals consider their own drinking habits, and this defensiveness makes the ad less effective. Study 1 provides evidence that compatible conditions can be effective at reducing binge estimates when consumers are not personally threatened. Those exposed to the shame- and guilt-compatible ads reported that the average student would be less likely to drink as compared to the incompatible conditions. A defensive processing account predicts that self versus other likelihoods would diverge whereas an emotional overload account driven by blocking of the ad content would predict similar effects for self and other drinking intentions. This finding offers evidence that consumers are engaged in defensive processing of the ad rather than ignoring it altogether.

*STUDY 2: COMPATIBILITY INCREASES CONSUMPTION OF BEVERAGES AND LEADS TO  
DEFENSIVE PROCESSING*

In this study, we examined whether the findings from study 1 would replicate in real behavior. Study 2 employed a 2 (incidental emotion: shame vs. guilt) by 2 (ad frame: observe vs. suffer) between-subjects design. The dependent variable involved a measure of actual drinking behavior, presented as a taste-test for a new drink marketed as an excellent alcoholic drink mixer.

*Procedure*

Seventy-one undergraduate students were recruited in exchange for partial course credit. Participants were first randomly assigned to the same emotional recall task designed to elicit either shame or guilt used in the previous study. After the recall task, participants were told they would be asked to evaluate several advertisements. Participants were then randomly assigned to view either the shame-compatible others as observers or guilt-compatible others as sufferers ad frame. After viewing the ad, they were asked several questions related to the quality of the ad, the ease of comprehension, and their overall evaluation of the ad. To reduce the chance that participants would connect the emotion and ad frame study with the subsequent taste test, participants were then thanked for their reactions to the ad study and given a distraction task lasting approximately five minutes. Upon completing the distraction task, participants were told that they would be sampling a new fruity alcoholic drink mixer. Participants were presented with information that the beverage was to be marketed as a drink mixer to be added to rum or vodka for parties. Each participant was then given an 18-ounce bottle of mixer selected for its rather low awareness and rate of trial among the population of undergraduates. Participants were told

that they were to sample as much or as little of the mixer as they liked and that they would be asked to evaluate the mixer on taste and quality after the trial. Subsequently, participants completed their evaluations of the mixer and covariate measures including how often they drank juice each week, the time of their last meal, and their subjective thirst before and after the trial. Additionally, participants were asked a question designed to assess their level of defensive processing. Our intention was to capture the proposed theoretical mechanism by examining the extent to which participants thought they could perform risky behaviors without personally experiencing undesirable outcomes. The five-point scale item was “If you were to have two drinks at a party, how likely would you be to get into a shame-causing (or guilt-causing, consonant with the incidental emotion) incident?” (1 = not at all likely, 5 = extremely likely). Participants were then debriefed and dismissed.

### *Results and Discussion*

*Beverage consumption.* The focal dependent variable for this study was the quantity of mixer consumed by each participant as a function of the experimental conditions. The key predictions were that in the compatible shame (others as observer) and guilt (others as sufferer) conditions, participants would consume more of the mixer than in the incompatible conditions, offering convergent evidence to support the binge drinking intentions data reported in study 1. The liquid remaining in each bottle was measured in ounces, comprising the focal variable. First, we examined the covariates to determine if they related significantly to the amount of mixer consumed. The number of times per week participants drank fruit juice was the only significant predictor and was retained as a covariate for the analyses. No other covariates were significant.

As predicted, we observe a significant emotion by ad frame interaction for the amount of mixer consumed ( $F(1, 65) = 24.22, p < .0001$ ). Follow-up contrasts revealed a significant effect

of ad frame for those experiencing shame such that more mixer was consumed when they were exposed to the shame-compatible ad ( $M_{\text{suffer}} = 4.73$ ,  $M_{\text{observe}} = 11.27$ ;  $F(1, 65) = 12.60$ ,  $p < .01$ ;  $\omega^2 = .13$ ). In the guilt prime condition, a significant difference was also observed such that more mixer was consumed by those exposed to the guilt-compatible ad ( $M_{\text{suffer}} = 11.26$ ,  $M_{\text{observe}} = 4.48$ ;  $F(1, 65) = 11.76$ ,  $p < .001$ ;  $\omega^2 = .12$ ). This result shows that compatibility between primed emotion and message impacts the actual consumption of an alcohol-related beverage.

*Defensive processing.* To test the underlying process, we examined a defensive processing measure related to individuals' emotional states. We analyzed how likely participants thought they were to get into situations that would make them feel more of the incidental emotion they were feeling (shame for shame-laden participants, guilt for guilt-laden participants) after having two drinks. The 2 x 2 ANOVA revealed a significant interaction between incidental emotion and ad frame ( $F(1, 68) = 10.42$ ,  $p < .001$ ). Follow-up contrasts revealed significant differences within the shame condition such that those exposed to the shame-compatible rather than incompatible ad reported that they were significantly less likely to get into a shame-provoking situation ( $M_{\text{suffer}} = 2.95$ ,  $M_{\text{observe}} = 1.85$ ;  $F(1, 68) = 3.69$ ,  $p = .058$ ;  $\omega^2 = .03$ ). In contrast, those in the guilt condition reported that they were significantly less likely to get into a guilt-provoking situation when exposed to the guilt-compatible rather than incompatible ad. ( $M_{\text{suffer}} = 1.62$ ,  $M_{\text{observe}} = 3.07$ ;  $F(1, 68) = 7.09$ ,  $p < .01$ ;  $\omega^2 = .08$ ). This result supports our theorized process that a compatible ad frame leads participants to discount the possibility that they will get into situations that involve the negative emotion they are already experiencing.

*Discussion.* Study 2 provides support for hypothesis H1 by replicating the effects found in study 1 on actual consumption of an alcoholic drink mixer. Consistent with our theorizing that

compatible frames threaten participants' emotional states and lead to defensive processing, we found that participants in compatible conditions were more likely to believe that their consumption of alcohol would not lead to undesirable outcomes. Instead of prudently managing their emotion by staying away from the behaviors that could exacerbate their negative emotions (i.e., alcohol consumption), individuals discount the link between the risky behavior and the negative emotional outcomes for themselves. Next, we follow up on further consequences of such defensive processing as well as examine how compatibility affects emotional repair.

### *STUDY 3: COMPATIBILITY INCREASES RECALL AND ENCOURAGES EMOTION REPAIR*

Study 3 was conducted to achieve three goals. First, we wanted to use a manipulation of incidental emotion possessing greater verisimilitude. Thus, the incidental emotions of shame and guilt were primed using advertisements rather than recall of an emotional incident. This methodology more closely conforms to real-world scenarios where compatibility may naturally arise. Second, we wanted to examine further the nature of the defensive processing induced by compatible frames. Specifically, we wished to understand if the defensive strategy employed by the participants was a form of vigilant processing or avoidance, as predicted by an emotional overload account. Our defensive processing mechanism predicts greater recall (H2b) whereas the emotional overload account would predict inhibited recall as a function of compatibility. Thus, we collected measures of recall of the anti-drinking ad. Finally, this study also provided a chance to tap into the emotion repair motives triggered by facing a compatible message frame (H2c). If participants in the compatible conditions defensively process the message to repair their emotional state, then emotion measures collected after exposure to the anti-drinking messages

should reflect such emotion repair. We would expect lowered emotions in the compatible conditions vis-à-vis the incompatible conditions.

### *Procedure*

One hundred eighty-two undergraduate students participated in a study with a 2 (incidental emotion: shame vs. guilt) x 2 (ad frame: observe vs. suffer) between-subjects design. In this study, to more closely simulate how compatibility may occur in real-world situations, we used advertising unrelated to alcohol instead of a recall task to induce initial shame or guilt. Participants were first shown a message designed to induce either shame or guilt. The shame ad listed the shameful consequences of cheating and not following the honor code. The tag line emphasized shame (“If you cheat, you should be ashamed”). In the guilt condition, participants read an ad that listed the harmful environmental consequences of buying bottled water. The tag line prominently featured the word *guilt* (“Every time you buy bottled water, you should feel guilty”). Thought listing tasks following the ads confirmed that these ads reinforced the intended emotions. In addition, a separate pretest further examined the efficacy of the ads as emotion manipulation. Forty-nine participants were exposed to one of the two ads described above. Following exposure to the ad, the scales reported in the previous studies measured the extent to which participants were feeling ashamed or guilty. Confirming the efficacy of the manipulation, participants exposed to the shame (vs. guilt) manipulation reported significantly more shame ( $M_{\text{guilt-ad}} = 2.61$ ,  $M_{\text{shame-ad}} = 3.74$ ;  $F(1, 47) = 8.98$ ,  $p < .01$ ). In contrast, participants exposed to the guilt-inducing (vs. shame-inducing) manipulation reported significantly more guilt ( $M_{\text{guilt-ad}} = 3.92$ ,  $M_{\text{shame-ad}} = 2.96$ ;  $F(1, 47) = 4.93$ ,  $p < .05$ ).

After the manipulation of shame or guilt, participants viewed the anti-drinking ad described in earlier studies. After completing a short, unrelated filler task, participants answered

questions measuring the effectiveness of the anti-drinking ad. Participants responded to two seven-point Likert scale items measuring the likelihood that they would consume three or more alcoholic beverages in one evening during the next two weeks and the likelihood that they would go to a bar in the next two weeks (1 = not at all likely, 7 = very likely). These items were averaged to create a binge drinking measure ( $r = .58$ ). Participants were then asked to recall the ad. The recall measure constituted the number of correctly recalled items from the ad copy. Next, participants indicated the extent to which they were experiencing shame and guilt at that moment on the previously described emotion measures. Finally, they were debriefed and dismissed.

--Insert Table 2 about here--

### *Results and Discussion*

*Binge drinking intentions.* In support of hypothesis H1, we observe a significant emotion by ad framing interaction, replicating the effects reported in study 1 (see table 2;  $F(1, 178) = 8.96$ ,  $p < .01$ ). Follow-up contrasts revealed that participants experiencing shame reported significantly greater intentions to binge drink when exposed to the shame-compatible others as observers ad frame than the shame-incompatible others as sufferers frame ( $M_{\text{suffer}} = 2.52$ ,  $M_{\text{observe}} = 3.38$ ;  $F(1, 178) = 4.26$ ,  $p < .05$ ;  $\omega^2 = .02$ ). In contrast, for guilt-laden participants, exposure to the guilt-compatible others as sufferers ad frame resulted in significantly greater intentions to binge drink than exposure to the guilt-incompatible others as observers frame ( $M_{\text{suffer}} = 3.83$ ,  $M_{\text{observe}} = 2.94$ ;  $F(1, 178) = 4.71$ ,  $p < .05$ ;  $\omega^2 = .02$ ).

*Recall.* In support of the defensive processing explanation, we found a significant emotion by ad framing interaction on recall (see table 2;  $F(1, 178) = 9.56$ ,  $p < .01$ ). Follow-up contrasts revealed that participants experiencing shame exposed to the shame-compatible frame showed significantly greater recall of the ad than those exposed to the incompatible frame ( $M_{\text{suffer}}$

= 1.39,  $M_{\text{observe}} = 1.85$ ;  $F(1, 178) = 4.71$ ,  $p < .05$ ;  $\omega^2 = .02$ ). In contrast, for guilt-laden participants, exposure to the guilt-compatible frame resulted in significantly greater recall than exposure to the guilt-incompatible frame ( $M_{\text{suffer}} = 1.71$ ,  $M_{\text{observe}} = 1.26$ ;  $F(1, 178) = 4.86$ ,  $p < .05$ ;  $\omega^2 = .02$ ). Recall data suggest that participants in the compatible conditions processed the message more critically than those in the incompatible conditions, supporting H2b. Combined with the results of studies 1 and 2, these results show that shame- and guilt-laden participants exposed to compatible messages tend to defensively process the message rather than ignore it.

*Measures of shame and guilt.* A 2 x 2 ANOVA on shame measured after exposure to both factors revealed a significant interaction between the initial emotion manipulation and ad frame ( $F(1, 178) = 7.12$ ,  $p < .01$ ). Our proposed emotion-repair goals account would predict that participants primed with shame and exposed to a shame-compatible ad frame would discount the anti-drinking message to repair their shame. In support of H2c, a planned contrast found that participants experiencing shame exposed to the shame-compatible others as observer frame rather than the others as sufferers frame had significantly lower levels of shame ( $M_{\text{shame-observe}} = 1.70$ ,  $M_{\text{shame-suffer}} = 2.97$ ;  $F(1, 178) = 14.06$ ,  $p < .001$ ;  $\omega^2 = .06$ ). Consistent with our theorizing, for participants who were initially made to feel guilty, feelings of shame were invariant ( $M_{\text{shame-observe}} = 2.51$ ,  $M_{\text{shame-suffer}} = 2.51$ ;  $F < 1$ ).

An ANOVA on the measure of guilt also found a significant interaction ( $F(1, 178) = 5.71$ ,  $p < .05$ ). Our theorizing predicts that guilt would be lowest when guilt-laden participants are exposed to a guilt-compatible ad frame. In support of H2c, participants experiencing guilt and exposed to the guilt-compatible others as sufferers frame reported significantly lower guilt relative to the guilt-incompatible others as observers condition ( $M_{\text{guilt-suffer}} = 2.18$ ,  $M_{\text{guilt-observe}} = 2.81$ ;  $F(1, 178) = 3.77$ ,  $p = .05$ ;  $\omega^2 = .01$ ). In addition, consistent with our expectation, participants

experiencing shame did not feel differential levels of guilt in response to the two types of anti-drinking messages ( $M_{\text{guilt-suffer}} = 2.79$ ,  $M_{\text{guilt-observe}} = 2.32$ ;  $F(1, 178) = 2.07$ ,  $p > .15$ ).

*Discussion.* This study replicated the effects found in studies 1 and 2 using an incidental emotion manipulation that is more reflective of real-world settings. We found additional support for a defensive processing mechanism in the recall findings, suggesting that compatibility leads to a thorough but defensive form of message processing. This result appears inconsistent with an emotional overload account. Finally, data from this study support the emotion repair motives underlying defensive processing. However, in this study, emotions were measured only after exposure to the ad. Thus, study 4 seeks to provide evidence of emotion repair by examining emotions before and after exposure to the ad.

#### *STUDY 4: COMPATIBILITY LEADS TO CHANGE IN EMOTIONS*

In this study, we wanted to examine how participants' emotions after the incidental emotion prime vary as a function of exposure to the shame-inducing or guilt-inducing message frame. Our theory predicts that the greatest amount of emotional repair corresponds with exposure to the compatible conditions, wherein individuals are motivated to defensively process an emotion-exacerbating ad to reduce their feelings of shame or guilt.

#### *Procedure*

Sixty-four undergraduate students participated in a study with a 2 (incidental emotion: shame vs. guilt) x 2 (ad frame: observe vs. suffer) between-subjects design. The manipulations for initial emotion as well as message frame were identical to those described in study 1 with one exception. After the initial emotion manipulation, participants reported their current emotions

using the scales described in the pilot study for both shame and guilt. After exposure to the anti-drinking message, participants again reported their current feelings of shame and guilt. No other measures were collected to avoid contaminating the predicted emotion-reduction effects.

Following past research (Duhachek, Zhang, and Krishnan, 2007), the follow-up emotions measures will be the key dependent variable, while controlling for initial emotions as a covariate.

### *Results and Discussion*

To test for emotional repair, 2 x 2 ANOVAs where the follow-up emotions measure was the dependent variable and the incidental emotions prime, the ad frame, their interaction, and initial emotion served as a covariate were examined for both shame and guilt respectively. In the case of shame, both the interaction term ( $F(1, 59) = 6.71, p < .01$ ) and initial shame factors were significant ( $F(1, 59) = 10.78, p < .0001$ ). In support of H2c, follow-up contrasts revealed that among participants primed with shame, those exposed to the shame-compatible (others as observers) ad showed significantly greater reduction in shame than those exposed to the incompatible (others as sufferers) ad ( $M_{\text{shame-observe-time2}} = 3.25, M_{\text{shame-suffer-time2}} = 4.80; F(1, 59) = 7.22, p < .009; \omega^2 = .08$ ), controlling for initial emotions. For those exposed to the guilt prime, there was no difference in shame as a function of ad frame ( $F(1, 59) = .95, p > .33$ ).

In the case of guilt, both the interaction term ( $F(1, 59) = 17.96, p < .0001$ ) and initial guilt factors were significant ( $F(1, 59) = 5.78, p < .02$ ). In support of H2c, follow-up contrasts revealed that among participants primed with guilt, those exposed to the guilt-compatible (others as sufferers) ad showed significantly greater reduction in guilt than those exposed to the incompatible (others as observers) ad ( $M_{\text{guilt-suffer-time2}} = 4.35, M_{\text{guilt-observe-time2}} = 5.75; F(1, 59) = 13.41, p < .0005; \omega^2 = .13$ ), controlling for initial emotions. For those exposed to the shame prime, there was a significant difference in guilt as a function of ad frame such that those in the shame-

incompatible condition reported a significant increase in guilt relative to the shame-compatible condition ( $M_{\text{shame-suffer-time2}} = 4.53$ ,  $M_{\text{shame-observe-time2}} = 3.44$ ;  $F(1, 59) = 5.29$ ,  $p < .03$ ;  $\omega^2 = .05$ ).

*Discussion.* These emotion repair data, along with study 3 findings, suggest that when exposed to compatible appeals that are likely to exacerbate negative self-conscious emotions, participants process these appeals in a defensive manner. Such defensive processing successfully leads to a reduction in participants' specific negative emotion and cannot be explained by generalized mood repair. One counterintuitive finding from study 4 is that an appeal designed to induce shame or guilt, when processed defensively under conditions of personal threat, leads to a reduction in the very same emotion it was designed to induce. These data support our theorizing that emotion repair motives underlie the detrimental effects of compatibility on persuasion.

#### *STUDY 5: CHRONIC MEASURES OF EMOTION SENSITIVITY*

This study was designed to generalize our effects and establish their robustness in a more ecologically valid setting. Our theorizing suggests that priming shame and guilt makes people sensitive to further increases in shame and guilt respectively. In this study, we used an individual difference scale measuring propensity to experience shame and guilt as a surrogate for the initial emotion prime. According to Tangney and Dearing (2002), people may be chronically more prone to responses that involve shame or guilt. The Test of Self-Conscious Affect or TOSCA (Tangney and Dearing 2002) measures such chronic proneness toward shame or guilt. Our theorizing predicts that people who are chronically prone to shame will show similar effects in response to the shame-compatible ad as those primed with shame. Similarly, people chronically prone to guilt will show similar effects in response to the guilt-compatible ad as those primed

with guilt. Hence, in this study, we measured the TOSCA, presented participants with one of the two anti-drinking ads, and subsequently assessed participants' drinking intentions.

### *Procedure*

Two hundred and thirty-three undergraduate students completed this study. As part of an unrelated study, participants first completed the TOSCA-3 (Tangney and Dearing 2002). After a short unrelated filler task, participants were exposed to either the shame-compatible (others as observer) or guilt-compatible (others as sufferer) anti-drinking ad. Next, we measured participants' intentions to consume alcohol, following the procedures used in study 1.

The TOSCA-3 requires each participant to respond to eleven scenarios. Each scenario is accompanied by a list of four possible responses that each correspond to one of four emotions (shame, guilt, detachment, or externalization). For each of the four possible responses, participants rate the likelihood that they will respond in that manner on a five-point scale (1 = not likely, 5 = very likely). For our purposes, we averaged the shame responses for the eleven scenarios to create a shame-proneness scale ( $\alpha = .66$ ). Similarly, we computed a guilt-proneness scale, using the guilt responses to all eleven scenarios ( $\alpha = .73$ ).

### *Results and Discussion*

We first examined the effect of shame-proneness and ad frame on participants' intentions to drink following the guidelines outlined by Aiken and West (1991). A regression using ad frame, shame-proneness, and their interaction to predict intentions to drink revealed only a significant interaction ( $F(1, 225) = 4.34, p < .05; f^2 = .02$ ). To understand how shame-proneness influenced the effectiveness of a shame-compatible versus incompatible ad frame, we conducted simple slopes analyses for the effect of shame-proneness on intentions within each ad frame.

This analysis revealed greater shame-proneness was associated with greater intentions to drink in

response to the shame-compatible ad frame ( $b = .77$ ,  $t(225) = 3.49$ ;  $p < .001$ ;  $f^2 = .05$ ) but not in response to the guilt-compatible ad frame ( $b = .06$ ,  $t(225) = .26$ ;  $p > .78$ ). This result shows that as shame-proneness increased, intentions to drink increased in response to the shame-compatible ad. Consistent with our theorizing that incompatibility does not produce defensive processing, shame-proneness was not related to drinking intentions in response to an incompatible ad.

We next examined the effect of guilt-proneness and ad frame on participants' intentions to drink. A regression using ad frame, guilt-proneness, and their interaction to predict intentions to drink revealed only a significant interaction ( $F(1, 225) = 5.19$ ,  $p < .05$ ;  $f^2 = .02$ ). Follow-up analyses on the simple slopes of guilt-proneness within each ad frame were conducted to examine the effect of guilt-proneness on intentions. As expected, greater guilt-proneness was associated with greater intentions to drink in response to the guilt-compatible ad frame ( $b = .70$ ,  $t(225) = 2.91$ ;  $p < .01$ ;  $f^2 = .04$ ) but not in response to the shame-compatible ad frame ( $b = -.07$ ,  $t(225) = -.31$ ;  $p > .75$ ). These results are consistent with our earlier results showing that guilt-compatible appeals backfire on individuals who are sensitive to feeling guilt.

These results provide convergent evidence for our prediction that compatible ads are less persuasive and show that our effects hold for individuals chronically sensitized to shame or guilt.

### *GENERAL DISCUSSION*

This paper presents five studies that examine how emotions induced by different message frames interact with the incidental emotional state of the consumer to determine message effectiveness. We show that different types of other-referent message frames elicit distinct emotional responses. We examined the influence of these different frames on behavioral

intentions and behaviors related to alcohol consumption when consumers were primed to experience incidental shame or guilt. Message frames that elicited the same emotion as the one primed incidentally (i.e., compatible frames) were less effective in that they led to greater intentions to drink and greater consumption than ad frames that elicited a different emotion (i.e., an incompatible frame). Consumers exposed to compatible ads were motivated by emotion repair and processed the ads in a defensive manner. This section discusses theoretical contributions, future directions, and practical recommendations.

#### *Theoretical Contributions and Directions*

Our findings provide a reversal of the effects reported by DeSteno et al. (2004) documenting enhanced persuasion as a function of emotional compatibility. We observe that for self-conscious emotions in highly threatening situations, compatible events may be seen as either more or less likely depending upon the frame of reference the consumer considers. In thinking about their own actions, shame- or guilt-inducing events appear less likely due to defensive processing. However, the increased scrutiny of the ad is persuasive in changing individuals' perceptions when they are not thinking about the personal consequences of their actions (i.e., average peer intentions to drink). Thus, one contribution of this research is to identify a boundary condition on compatibility-driven persuasion effects. It should be noted that in the context of compatibility effects, our studies found that compatibility backfires whereas incompatibility is no more persuasive than control conditions. More research is needed to identify conditions wherein incompatibility may enhance persuasion.

Another contribution of this research relates to identifying a new mechanism through which emotion-specific compatibility effects operate. While the idea that people resist further deterioration in their negative mood state has been widely examined in mood repair theories

(e.g., Keller, Lipkus, and Rimer 2003; Raghunathan and Trope 2002), most research suggests that people repair negative mood states generally. Our results suggest that shame-laden (guilt-laden) consumers are particularly resistant to messages that might lead to greater shame (guilt) but are open to processing messages that lead to another emotion. The current results also suggest that consumers repair their emotions and guard against exacerbating their negative emotions via a defensive processing mechanism resulting in a belief that their actions will not lead to those emotions in the future. We found that shame-laden (guilt-laden) consumers, when exposed to messages that asserted that drinking might lead to additional shame-inducing (guilt-inducing) situations, believed that their own drinking would not lead to those consequences. In this way, our findings identify a new mechanism by which consumers repair or maintain negative emotional states – defensive processing.

Past research on emotions and information has suggested that priming negative emotions might affect message elaboration as a function of the appraisal underlying the emotion (e.g., uncertainty, Tiedens and Linton 2001). Our results suggest that it is not the primed emotion alone that determines message effectiveness and elaboration, but rather the interaction of the primed emotion with the message-induced emotion that determines whether and how a message is processed. When a primed negative emotion encounters a message that exacerbates that emotion, the message might be elaborated upon, but such elaboration might be defensive.

Given the importance of understanding emotional processes in persuasion, a discussion of the relatively modest effect sizes observed in the current research (studies 1 and 3) is warranted. Although the compatibility-based interaction effects were not large in some of the laboratory studies, the counterintuitive nature of these findings and critical importance of persuasion in the consumer health context underscore the need to examine compatibility as a theoretical issue.

Additionally, the effect sizes reported in study 2 using an actual consumption variable produced much larger effects. The relatively greater verisimilitude captured by this study suggests compatibility-based defensive processing has potentially strong influences in this context.

### *Practical Contributions and Implications*

Across a wide range of harmful behaviors, such as smoking, risky sexual behavior, underage and binge drinking, and driving under the influence, public service messages often employ a strategy emphasizing the impressions friends or others may form if the consumer behaves in a certain way. In the context of anti-drinking advertisements, concerns regarding binge drinking frequently center on “making a fool out of oneself” or “losing control and doing something bad.”<sup>2</sup> Public service advertising appeals often highlight emotions that play on these concerns (e.g., “Avoid the shame and embarrassment of a drunk-driving arrest”) and reference the role of the consequences of one’s actions with respect to others (e.g., “Think about those you may harm if you cause an accident while driving drunk”). Despite the use of ad frames that may involve self-conscious emotions, little research explains the conditions under which such appeals are effective. Our research suggests that guilt and shame appeals should be used cautiously.

Our results further suggest that marketers should consider the emotional responses induced by message characteristics as well as the broader milieu within which the ad will be embedded. For instance, a message that induces guilt might not be the best message to insert in a guilt-ridden television drama. Our findings highlight the need to have a well-planned media placement strategy for messages such that managers might decide on precise media placements not based simply on target audience profiles and budget constraints but also based on the emotional environment that the media content might create. Such thinking would result in a dramatic step forward in thinking about context effects on media effectiveness.



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## REFERENCES

Agrawal, Nidhi, Geeta Menon, and Jennifer L. Aaker (2007), "Getting Emotional About Health," *Journal of Marketing Research*, 44 (February), 100–113.

Aiken, Leona and Stephen G. West (1991), *Multiple Regression: Testing and Interpreting Interaction*. Newbury Park, CA: Sage.

Aspinwall, Lisa G. (1998), "Rethinking the Role of Positive Affect in Self-Regulation," *Motivation and Emotion*, 22 (March), 1–32.

Baumeister, Roy F., Arlene Stilwell, and Todd F. Heatherton (1994), "Guilt: An Interpersonal Approach," *Psychological Bulletin*, 115 (2), 243–67.

DeSteno, David, Richard E. Petty, Derek D. Rucker, Duane T. Wegener, and Julia Braverman (2004), "Discrete Emotions and Persuasion: The Role of Emotion-Induced Expectancies," *Journal of Personality and Social Psychology*, 86 (January), 43–56.

Duhachek, Adam, Shuoyang Zhang, and Shanker Krishnan (2007), "Anticipated Group Interaction: Coping with Valence Asymmetries in Attitude Shift," *Journal of Consumer Research*, 34 (5) 395–405.

Hong, Sung-Mook (1992), "Hong's Psychological Reactance Scale: A Further Factor Analytic

Refinement,” *Psychological Reports*, 70 (2), 512–14.

Keller, Punam Anand, Isaac M. Lipkus, and Barbara K. Rimer (2003), “Affect, Framing, and Persuasion,” *Journal of Marketing Research*, 40 (February), 54–64.

Lindsay-Hartz, Janice, Joseph H. De Rivera, and Michael F. Mascolo (1995), “Differentiating Guilt and Shame and Their Effects on Motivation,” in *Self-Conscious Emotions: The Psychology of Shame, Guilt, Embarrassment, and Pride*, J.P. Tangney and K.W. Fischer, eds. New York: Guilford Press, 274–300.

Menon, Geeta, Ellie Kyung, and Nidhi Agrawal (forthcoming), “Biases in Social Comparison: Optimism or Pessimism?” *Organizational Behavior and Human Decision Processes*.

Petty, Richard E. and Duane T. Wegener (1998), “Matching Versus Mismatching Attitude Functions: Implications for Scrutiny of Persuasive Messages,” *Personality and Social Psychology Bulletin*, 24, 227–40.

Raghunathan, Rajagopal and Michel T. Pham (1999), “All Negative Moods Are Not Created Equal: Motivational Influences of Anxiety and Sadness on Decision Making,” *Organizational Behavior and Human Decision Processes*, 79 (July), 56–77.

——— and Yaacov Trope (2002), “Walking the Tightrope Between Feeling Good and Being Accurate: Mood as a Resource in Processing Persuasive Messages,” *Journal of Personality & Social Psychology*, 83 (3), 510–25.

Smith, Craig A. and Phoebe C. Ellsworth (1985), "Patterns of Cognitive Appraisal in Emotion," *Journal of Personality and Social Psychology*, 48 (April), 813–38.

Tangney, June P. (1995), "Shame and Guilt in Interpersonal Relationships," in *Self-Conscious Emotions: The Psychology of Shame, Guilt, Embarrassment, and Pride*, June Price Tangney and Kurt W. Fischer, eds. New York: Guilford Press, 114–42.

——— and Ronda L. Dearing (2002), *Shame and Guilt*. New York: Guilford Press.

Tiedens, Larissa Z. and Susan Linton (2001), "Judgment under Emotional Uncertainty: The Effects of Specific Emotions on Information Processing," *Journal of Personality and Social Psychology*, 81 (December), 973–88.

Tracy, Jessica L. and Richard W. Robins (2006), "Appraisal Antecedents of Shame and Guilt: Support for a Theoretical Model," *Personality and Social Psychology Bulletin*, 32 (10), 1339–51.

Zemack-Rugar, Yael (2008), "When Negative Emotions Lead to Increases in Self-Control," working paper, Virginia Polytechnic Institute and State University.

———, James R. Bettman, and Gavan J. Fitzsimons (2007), "Effects of Nonconsciously Priming Emotion Concepts on Behavior," *Journal of Personality and Social Psychology*, 93 (6), 927–39.

*FOOTNOTES*

1. The original ad can be found at [http://www.media-awareness.ca/english/resources/educational/overheads/alcohol/serious\\_messaging.cfm](http://www.media-awareness.ca/english/resources/educational/overheads/alcohol/serious_messaging.cfm)
2. Goldfarb Consultants, *MADD: Underage Drinking Prevention*, September 2001, <http://www.madd.org/docs/Goldfarb.pdf>.

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TABLE 1: COMPATIBILITY BACKFIRES AND LEADS TO DIVERGENT

	Primed Emotion					
	DRINKING LIKELIHOODS FOR SELF AND OTHERS (STUDY 1 RESULTS)					
	Shame		Guilt		Control	
	Ad Framing of Consequences					
	Others Observe (Shame-compatible)	Others Suffer (Guilt-compatible)	Others Observe (Shame-compatible)	Others Suffer (Guilt-compatible)	Others Observe (Shame-compatible)	Others Suffer (Guilt-compatible)
Guilt Measure after Prime	3.33	3.27	4.07	3.96	2.13	1.91
Shame Measure after Prime	3.91	4.10	3.16	3.13	2.03	1.87
Intentions to Binge Drink for Self	4.26	3.67	3.66	4.33	3.78	3.88
Defensive Processing: Likelihood that the Average Peer will Binge Drink (lower numbers indicate greater defensive processing)	4.77	5.21	5.08	4.56	5.14	5.07

TABLE 2: COMPATIBILITY LEADS TO LOWER MESSAGE EFFECTIVENESS,

	Primed Incidental Emotions			
	Shame		Guilt	
	Ad Framing of Consequences			
INCREASED DEFENSIVE PROCESSING AND EMOTION REPAIR (STUDY 3 RESULTS)				
	Others Observe (Shame-compatible)	Others Suffer (Guilt-compatible)	Others Observe (Shame-compatible)	Others Suffer (Guilt-compatible)
Intentions to Binge Drink for Self	3.38	2.52	2.94	3.83
Processing Indicator: Recall (greater numbers show greater recall)	1.85	1.39	1.26	1.71
Shame after Exposure to Anti-Drinking Message	1.70	2.97	2.51	2.51
Guilt after Exposure to Anti-Drinking Message	2.32	2.79	2.81	2.18

TABLE 3: COMPATIBILITY LEADS TO EMOTION REPAIR (STUDY 4 RESULTS)

	Primed Incidental Emotions			
	Shame		Guilt	
	Ad Framing of Consequences			
	Others Observe (Shame-compatible)	Others Suffer (Guilt-compatible)	Others Observe (Shame-compatible)	Others Suffer (Guilt-compatible)
Shame after Initial Prime	5.06	5.20	4.69	3.94
Shame after Message Exposure	3.25	4.80	4.88	4.00
Change in Shame	-1.81	.40	.19	.06
Guilt after Initial Prime	3.19	3.40	4.87	5.47
Guilt after Message Exposure	3.44	4.53	5.75	4.35
Change in Guilt	.25	1.13	.88	-1.12

Appendix: Others as Sufferers and Others as Observers Ad Frames



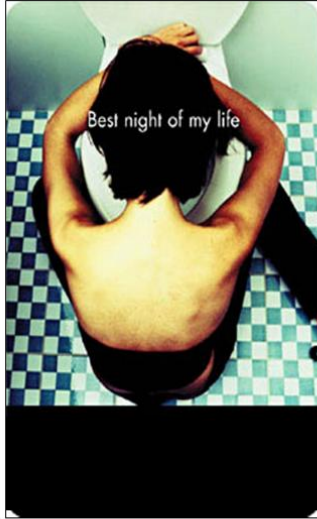
**Think When You Drink!**

**Here's What Can Happen to Those You Love:**

- Suffer the Next Day Taking Care of Your Hangover
- Your Friends Could Get Arrested due to Your Actions
- Your Friends Could Suffer and Be Injured in a Car Accident

**Your Friends & Family could suffer through the things that happen when you drink.**

DOWN



### **Think When You Drink!**

#### **Here's What Can Happen to Those You Love:**

- They could watch you spend the next day hungover
- Your Friends could find out you were Arrested due to Your Actions
- Your Friends Could Watch You be in a Car Accident

**Your Friends & Family could be watching the things that happen when you Drink!**

DO NOT