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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 because of a process in which consumers discount the notion 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, persuasion

Emotional Compatibility and the Effectiveness of Antidrinking Messages: A Defensive Processing Perspective on Shame and Guilt

Consumer research in recent years has explored how emotional experiences affect attitudes and behaviors. Most early research focused on the role of valenced affective states (e.g., good versus 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 versus anger) process information differently (Agrawal, Menon, and Aaker 2007; Zemack-Rugar, Bettman, and Fitzsimons 2007).

Emotions may affect information processing through two conceptually distinct paths. First, features of a message may lead people to experience certain emotions that subsequently influence their 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 may be especially pronounced for negative emotions, in which people are highly motivated to repair their undesirable emotional states. Building on prior research on specific emotions, mood repair, and motivated reasoning, we examine how consumers experiencing the specific negative emotions of shame or guilt respond to messages that induce additional shame or guilt. We believe that these emotional states are distinct from other negative emotions in that they cast the self in a negative role. Thus, we posit that consumers engage in defensive processing to alleviate these self-referential negative states.

Shame and guilt have been referred to as self-conscious emotions because 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 they often carry extremely strong personal implications. However, little research has examined how feelings of shame and guilt affect the persua-

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sive efficacy of public service messages. We test conditions that foster or hinder the effectiveness of antidrinking messages might affect fellings of shame and guilt. We hypothesize that shame- and guilt-inducing frames are differentially effective as a function of the compatibility between a person's incidental emotional state and the emotion evoked by the ad frame. We demonstrate that for people experiencing shame (guilt), subsequent exposure to a shame-inducing (guilt-inducing) antidrinking message is less persuasive, such that the compatible message leads to significantly greater intentions to binge drink. We posit that these effects are driven by defensive processing of the messages. Next, we 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 posits that shame and guilt share several characteristics that suggest similar consequences for judgment and processing. For example, they are both negative emotions and thus share a negative valence appraisal. Both emotions are unpleasant states, and people 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 people to view themselves as agents of socially undesirable outcomes. Shame and guilt are negative states, and this negativity is often attributed to aspects of the self that produced the emotion (Tangney 1995).

However, these emotions differ on other appraisal dimensions, such as their effect with regard to others (Lindsay-Hartz, De Rivera, and Mascolo 1995). Shame arises from a person's concern with others' evaluations of him- or herself. Shame may be experienced when the self is viewed through the eyes of another and a person realizes that behaviors producing the emotion are not congruous with his or her ideal self. In contrast, guilt pertains to the effect of a person's actions on others (Baumeister, Stilwell, and Heatherton 1994; Tangney 1995). Guilt may be experienced when a person realizes that he or she is responsible for behaviors that have caused a violation such that another has been harmed (Lindsay-Hartz, De Rivera, and Mascolo 1995). These differences have important consequences for information processing and message framing.

Thoughts or situations (e.g., thinking that others might suffer as a result of a person's actions) that are consistent with the appraisals of an emotion (e.g., guilt) lead people to experience that emotion (Smith and Ellsworth 1985). Thus, considering the role of others as either observers or sufferers of a person'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 a person's drinking should induce shame for that person. Ad frames that accentuate the role of others as sufferers of the negative consequences of a person's drinking should induce guilt for that person.

Pilot Study: Message Frames Induce Guilt and Shame

To determine whether differences in the way others are invoked differentially affect shame and guilt responses, we manipulated two roles that others (observers versus sufferers of negative consequences) play in antidrinking advertisements, and we measured participants' emotional responses. This experiment had a 3 (ad frame: observe versus suffer versus no ad control) × 2 (measured emotion: shame versus guilt) between-subjects design. We modeled the control condition to establish baseline levels of shame and guilt. Seventy-five participants were randomly exposed to antidrinking advertisements that manipulated whether others were framed as observers or sufferers of the consequences of drinking. To develop the focal advertisement, we modified an actual public service announcement advertisement from a responsible drinking campaign (for pilot study advertisements, see the Appendix).[1] Note that the focal advertisements did not feature the words "shame" or "guilt." After viewing the advertisement, participants rated the extent to which they experienced either guilt or shame, using five-point Likert scales. In the control condition, participants completed the emotions measures without reading the advertisement. We adapted the emotions measures from Zemack-Rugar (2008); they consisted of three guilt items (guilt-ridden, culpable, and remorseful; $\alpha = .89$) and three shame items (embarrassed, ashamed, and humiliated; $\alpha = .92$). As expected, we observed a significant ad frame × 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 ($M_{observe} = 3.56$, $M_{suffer} = 2.80$; $F(1, 74) = 3.82$, $p = .05$; $M_{control} = 2.07$; $F(1, 74) = 15.15$, $p < .05$). The others-as-sufferers frame led to greater feelings of guilt than the others-as-observers frame or the control ($M_{suffer} = 3.88$, $M_{observe} = 2.88$; $F(1, 74) = 4.33$, $p < .05$; $M_{control} = 2.59$; $F(1, 74) = 7.45$, $p < .05$).

The pilot study shows that messages that frame others as the sufferers of negative consequences of a person's drinking increase feelings of guilt relative to a control group and relative to a message that frames others as the observers of the negative consequences of a person's drinking. In contrast, a message that frames others as the observers of the negative consequences of a person's drinking increases feelings of shame relative to a control group and relative to a message that frames others as the sufferers of the negative consequences of a person's drinking. Subsequently, we also 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 now 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 then views an adver-

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[1]The original advertisement can be found at http://www.media-awareness. ca/english/resources/educational/overheads/alcohol/serious_messaging.cfm.

tisement against binge drinking that induces more guilt. Alternatively, consider a consumer who experiences shame as a result of attending an alcohol treatment program in which he or she is given informational materials that are designed to induce additional shame. Such examples are characterized by compatibility between consumers' incidental emotional state and the emotional state aroused by the message. Prior research suggests that incidental emotions influence the processing of subsequent unrelated messages. However, there is little insight into how incidental emotions may interact with message-induced emotion. We investigate how consumers process emotion-compatible advertisements 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) than incompatible ad frames that elicit another negative emotion. Next, we review the literature on how such messages may affect persuasion in the unique context of shame and guilt.

Prior persuasion research is equivocal as to how compatibility may affect 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 and colleagues (2004) find that people were more persuaded by emotion-compatible information.

A countervailing logic detailed in prior research on negative emotions suggests that compatible message frames are less persuasive than incompatible message frames. People in a negative mood state have been shown to guard their already negative mood against further deterioration (Raghunathan and Trope 2002) and to resist negative self-evaluation. It has been further shown that people not only guard against their negative mood but also specifically guard against the discrete negative emotion 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 people 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 people 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

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 people are highly motivated to repair, we hypothesize that compatible appeals will be less persuasive than incompatible appeals. Specifically, people experiencing shame (guilt) are likely to guard

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

> H$_1$: For people experiencing incidental shame or guilt, compatible message frames are less persuasive than incompatible message frames.

Note that our predictions of why compatible appeals are less persuasive follows from the assertion that people already feeling a negative emotion (e.g., shame, guilt) will resist the compatible appeal, which is likely to exacerbate that emotion. However, if people 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 people 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 will be 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 antidrinking appeals. We posit that this defensive processing mechanism will manifest in three notable ways.

First, defensive processing results in distorted perceptions of a person's susceptibility to the negative consequences associated with drinking. People 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 2009). This effect arises from a person's desire to arrive at a preferred conclusion, namely, that his or 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 people 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 in which compatibility enhances persuasion. Specifically, we hypothesize the following:

> H_{2a}: For people experiencing incidental shame or guilt, compatible message frames are more persuasive than incompatible frames when making judgments about others (e.g., when considering the drinking likelihood of others).

Second, we predict that this process results in a greater vigilance to attend to the message. Previously, we argued that shame and guilt are self-referential negative emotions that cast the self in a negative light. Thus, when faced with a message that enhances these emotions (i.e., compatible message), people 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:

> H_{2b}: For people experiencing incidental shame or guilt, compatible (versus incompatible) message frames are processed more elaborately and result in greater recall of the message.

Third, 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 person's need to actively reduce his or her negative emotional state. Consequently, people engaged in defensive processing activated by compatibility should report significantly more emotional repair (i.e., reduction in the relevant negative emotion) than those in incompatible conditions. This prediction also runs counter to an emotional overload explanation, which predicts that people in the compatible conditions would have significantly more shame and guilt after exposure to the advertisement than people in incompatible conditions.

> H_{2c}: For people experiencing incidental shame or guilt, compatible message frames lead to a greater decrease in the initial emotion than incompatible message frames.

Overview of Studies

We test these four hypotheses related to compatibility across five studies. In each study, participants are first primed with shame or guilt in an unrelated task. Then, they are exposed to either the shame-inducing or the guilt-inducing antidrinking messages we described in the pilot study. Next, the relevant measures of persuasion, emotion, and processing are collected. Study 1 tests the backfire effect of compatibility on drinking intentions and provides evidence of defensive processing by measuring drinking intentions for the average peer (H_{2a}). 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

before exposure to the antidrinking message. Process measures, such as recall (H_{2b}) and emotions after exposure to the ad frame (H_{2c}), are collected to provide additional convergent evidence for our theorizing based on defensive processing. Study 4 more directly tests for emotional repair after exposure to the compatible message (H_{2c}). 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 antidrinking 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 (H_1). 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, 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 versus guilt versus neutral) $\times$ 2 (ad frame: shame-compatible observer versus guilt-compatible sufferer) between-subjects design. The presence of the control condition enables 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 (H_{2a}).

Procedure

Four hundred seventy-eight undergraduate students participated in the study. Participants were first randomly assigned to an emotional recall task in which 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, we measured shame and guilt 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 antidrinking advertisement that manipulated whether the appeal cast peers as observers or sufferers of consequences. After viewing the advertisement, 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 that we ostensibly designed to assess the habits of college students. A seven-point Likert scale item (1 = "much less," and 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?"). After this measure, a similar measure was administered to assess how likely participants believed the

average undergraduate student was to indulge in binge drinking in the coming year.

Results

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

Binge drinking intentions. In support of our primary prediction, only the emotion × ad framing interaction was significant (see Table 1; $F(2, 474) = 10.98$, $p < .001$). An examination of planned contrasts to better understand the nature of this effect offers support for our theorized predictions. Participants experiencing shame who were 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 ($M_{suffer} = 3.67$, $M_{observe} = 84.26$; $F(1, 474) = 9.24$, $p < .01$; $\omega^2 = .02$). Comparing participants primed with shame with those in the neutral control condition, we observe a significant difference such that those in the shame-compatible conditions report a significantly greater intention to binge than the control group ($M_{shame-observe} = 4.26$, $M_{neutral-observe} = 3.78$; $F(1, 474) = 7.05$, $p < .01$; $\omega^2 = .01$). 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 ($M_{suffer} = 4.33$, $M_{observe} = 3.66$; $F(1, 474) = 12.42$, $p < .005$; $\omega^2 = .02$). Comparing those primed with guilt with the neutral control

condition, we observe a significant difference ($M_{guilt-suffer} = 4.33$, $M_{neutral-suffer} = 3.88$; $F(1, 474) = 5.67$, $p < .05$; $\omega^2 = .01$), 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 ($F(1, 474) = 1.27$, $p > .25$).

Binging estimates for the average student. To find support for our theoretical account based on a defensive processing mechanism due to high personal threat, we examine drinking estimates after personal threat is removed. Thus, we asked participants to rate the likelihood that the average undergraduate student would binge drink. We find a significant emotion × ad frame interaction ($F(2, 474) = 5.36$, $p < .005$). Participants experiencing shame reported that the average undergraduate student was significantly less likely to binge drink when exposed to the shame-compatible others-as-observers frame than those exposed to the others-as-sufferers frame ($M_{shame-suffer} = 5.21$, $M_{shame-observe} = 4.77$; $F(1, 474) = 4.44$, $p < .05$; $\omega^2 = .01$). 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 ($M_{shame-observe} = 4.77$, $M_{neutral-observe} = 5.14$; $F(1, 474) = 3.61$, $p = .058$; $\omega^2 = .01$). 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-sufferers frame resulted in significantly lower estimates of the average undergraduate student binge drinking than the others-as-observer frame ($M_{guilt-suffer} = 4.56$, $M_{guilt-observe} = 5.08$; $F(1, 474) = 6.37$, $p < .01$; $\omega^2 = .01$). Comparing the guilt-compatible condition and the neutral control condition, we observe a significant difference ($M_{guilt-suffer} = 4.56$, $M_{neutral-suffer} = 5.07$; $F(1, 474) = 6.08$, $p < .05$; $\omega^2 = .01$), such that those in the guilt-compatible group reported that others were significantly less likely to binge, indicating that the advertisement was effective when the context was nonthreatening 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 H_{2a}.

Examining a rival explanation based on reactance. A possible alternative explanation to the reported data does

Table 1
STUDY 1 RESULTS: COMPATIBILITY BACKFIRES AND LEADS TO DIVERGENT DRINKING LIKELIHOODS FOR SELF AND OTHERS

	Shame		Guilt		Control	
	Primed Emotion					
	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

not rely on a rationale based on defensive processing as a result of a personal threat. A reactance-based explanation suggests that people in the compatible conditions drink more as a result of a perceived loss of freedom caused by the matching between their own emotional state and that initiated by the advertisement. To examine this possibility, we collected measures of reactance using Hong's (1992) ten-item trait-based reactance measure (α = .99) for half the participants. If reactance were accountable for the effects observed, 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 others. Examining the self-intentions binge measure, we observe both a significant ad frame × 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 × 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 the others binge intentions measures. Thus, reactance cannot fully explain the pattern of results.

Discussion

Study 1 established that the compatibility between shame and guilt and message framing produces a backfire effect on persuasion such that participants exposed to the compatible conditions reported a greater intention to binge drink than 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, in which people in compatible conditions believe that others should not binge drink, thus demonstrating increased persuasion in compatible conditions when personal threat is removed. We posit that compatibility induces significant defensiveness when people consider their own drinking habits, and this defensiveness makes the advertisement less effective. Study 1 provides evidence that compatible conditions can be effective at reducing binge estimates when consumers are not personally threatened. Compared with participants in the incompatible conditions, those exposed to the shame- and guilt-compatible advertisements reported that the average student would be less likely to drink. 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 advertisement rather than ignoring it altogether.

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

In Study 2, we examine whether the findings from Study 1 replicate with real behavior. Study 2 employs a 2 (inciden-

tal emotion: shame versus guilt) × 2 (ad frame: observe versus 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 that they would be asked to evaluate several advertisements. Participants were then randomly assigned to view either the shame-compatible others-as-observers or the guilt-compatible others-as-sufferers ad frame. After viewing the advertisement, they were asked several questions related to the quality of the advertisement, the ease of comprehension, and their overall evaluation of the advertisement. 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 were given a distraction task that lasted approximately five minutes. After 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. 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 undergraduate students. 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. In addition, 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 believed that 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," and 5 = "extremely likely"). Participants were then debriefed and dismissed.

Results

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 data on binge drinking intentions we reported in Study 1. The liquid remaining in each bottle was measured in ounces; this was the focal variable. We began by examining the covariates to determine whether 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 we retained this as a covariate for the analyses. No other covariates were significant.

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

Defensive processing. To test the underlying process, we examined a defensive processing measure related to people's 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 × 2 analysis of variance (ANOVA) revealed a significant incidental emotion × ad frame interaction ($F(1, 68) = 10.42$, $p < .001$). Follow-up contrasts revealed significant differences within the shame condition, such that those exposed to the shame-compatible rather than the -incompatible advertisement reported that they were significantly less likely to get into a shame-provoking situation ($M_{suffer} = 2.95$, $M_{observe} = 1.85$; $F(1, 68) = 3.69$, $p = .058$; $\omega^2 = .03$). 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 advertisement ($M_{suffer} = 1.62$, $M_{observe} = 3.07$; $F(1, 68) = 7.09$, $p < .01$; $\omega^2 = .08$). This result supports our hypothesized 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 H_1 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), participants 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 and examine how compatibility affects emotional repair.

STUDY 3: COMPATIBILITY INCREASES RECALL AND ENCOURAGES EMOTION REPAIR

We conducted Study 3 to achieve three goals. First, we wanted to use a manipulation of incidental emotion that possessed greater verisimilitude. Thus, we primed the inci-

dental emotions of shame and guilt using advertisements rather than recall of an emotional incident. This methodology more closely conforms to real-world scenarios in which compatibility may naturally arise. Second, we wanted to examine further the nature of the defensive processing induced by compatible frames. Specifically, we wanted to understand whether the defensive strategy that participants employed was a form of vigilant processing or avoidance, as predicted by an emotional overload account. Our defensive processing mechanism predicts greater recall (H_{2b}), whereas the emotional overload account would predict inhibited recall as a function of compatibility. Thus, we collected measures of recall of the antidrinking advertisement. Third, this study also enabled us to tap into the emotion repair motives triggered by facing a compatible message frame (H_{2c}). If participants in the compatible conditions defensively process the message to repair their emotional state, emotion measures collected after exposure to the antidrinking messages should reflect such emotion repair. We would expect lowered emotions in the compatible conditions than in the incompatible conditions.

Procedure

One hundred eighty-two undergraduate students participated in a study with a 2 (incidental emotion: shame versus guilt) × 2 (ad frame: observe versus 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 advertisement listed the shameful consequences of cheating and not following the honor code. The tagline emphasized shame ("If you cheat, you should be ashamed"). In the guilt condition, participants read an advertisement that listed the harmful environmental consequences of buying bottled water. The tagline prominently featured the word "guilt" ("Every time you buy bottled water, you should feel guilty"). Thought-listing tasks following the advertisements confirmed that these advertisements reinforced the intended emotions. In addition, a separate pretest further examined the efficacy of the advertisements as emotion manipulation. Forty-nine participants were exposed to one of the two advertisements. After participants were exposed to the advertisement, the scales reported in the previous studies measured the extent to which they were feeling ashamed or guilty. Confirming the efficacy of the manipulation, participants exposed to the shame (versus guilt) manipulation reported significantly more shame ($M_{guilt-ad} = 2.61$, $M_{shame-ad} = 3.74$; $F(1, 47) = 8.98$, $p < .01$). In contrast, participants exposed to the guilt-inducing (versus shame-inducing) manipulation reported significantly more guilt ($M_{guilt-ad} = 3.92$, $M_{shame-ad} = 2.96$; $F(1, 47) = 4.93$, $p < .05$).

After the manipulation of shame or guilt, participants viewed the antidrinking advertisement described in the previous studies. After completing a short, unrelated filler task, they answered questions measuring the effectiveness of the antidrinking advertisement. 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," and 7 = "very likely"). We averaged these items to create a binge drinking measure (r = .58). Participants were then asked to recall the advertisement. 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.

Results

Binge drinking intentions. In support of H_1, we observe a significant emotion × 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 ($M_{suffer} = 2.52$, $M_{observe} = 3.38$; $F(1, 178) = 4.26$, $p < .05$; $\omega^2 = .02$). 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 ($M_{suffer} = 3.83$, $M_{observe} = 2.94$; $F(1, 178) = 4.71$, $p < .05$; $\omega^2 = .02$).

Recall. In support of the defensive processing explanation, we found a significant emotion × ad framing interaction on recall (see Table 2; $F(1, 178) = 9.56$, $p < .01$). Follow-up contrasts revealed that participants experiencing shame who were exposed to the shame-compatible frame showed significantly greater recall of the advertisement than those who were exposed to the incompatible frame ($M_{suffer} = 1.39$, $M_{observe} = 1.85$; $F(1, 178) = 4.71$, $p < .05$; $\omega^2 = .02$). In contrast, for guilt-laden participants, exposure to the guilt-compatible frame resulted in significantly greater recall than exposure to the guilt-incompatible frame ($M_{suffer} = 1.71$, $M_{observe} = 1.26$; $F(1, 178) = 4.86$, $p < .05$; $\omega^2 = .02$). Recall data suggest that participants in the compatible conditions processed the message more critically than those in the incompatible conditions, in support of H_{2b}. Combined with the results of Studies 1 and 2, these results show that shame-

and guilt-laden participants exposed to compatible messages tend to process the message defensively rather than ignore it.

Measures of shame and guilt. A 2 × 2 ANOVA on shame measured after exposure to both factors revealed a significant interaction between the initial emotion manipulation and the 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 antidrinking message to repair their shame. In support of H_{2c}, a planned contrast showed that participants experiencing shame who were exposed to the shame-compatible others-as-observers frame had significantly lower levels of shame than those exposed to the others-as-sufferers frame ($M_{shame\text{-}observe} = 1.70$, $M_{shame\text{-}suffer} = 2.97$; $F(1, 178) = 14.06$, $p < .001$; $\omega^2 = .06$). Consistent with our theorizing, for participants who were initially made to feel guilty, feelings of shame were invariant ($M_{shame\text{-}observe} = 2.51$, $M_{shame\text{-}suffer} = 2.51$; $F < 1$).

An ANOVA on the measure of guilt also revealed 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 H_{2c}, participants who experienced guilt and were exposed to the guilt-compatible others-as-sufferers frame reported significantly lower guilt than those in the guilt-incompatible others-as-observers condition ($M_{guilt\text{-}suffer} = 2.18$, $M_{guilt\text{-}observe} = 2.81$; $F(1, 178) = 3.77$, $p = .05$; $\omega^2 = .01$). In addition, consistent with our expectation, participants experiencing shame did not feel differential levels of guilt in response to the two types of antidrinking messages ($M_{guilt\text{-}suffer} = 2.79$, $M_{guilt\text{-}observe} = 2.32$; $F(1, 178) = 2.07$, $p > .15$).

Discussion

This study replicated the effects we 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, we measured emotions only after exposure to the advertisement. Thus, Study 4 attempts to provide evidence of emotion repair by examining emotions before and after exposure to the advertisement.

STUDY 4: COMPATIBILITY LEADS TO CHANGE IN EMOTIONS

In this study, we 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 will correspond with exposure to the compatible conditions, in which people are motivated to defensively process an emotion-exacerbating advertisement to reduce their feelings of shame or guilt.

Procedure

Sixty-four undergraduate students participated in a study with a 2 (incidental emotion: shame versus guilt) × 2 (ad

Table 2

STUDY 3 RESULTS: COMPATIBILITY LEADS TO LOWER MESSAGE EFFECTIVENESS, INCREASED DEFENSIVE PROCESSING, AND EMOTION REPAIR

	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)*
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 antidrinking message	1.70	2.97	2.51	2.51
Guilt after exposure to antidrinking message	2.32	2.79	2.81	2.18

frame: observe versus suffer) between-subjects design. The manipulations for initial emotion and 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 antidrinking message, participants again reported their current feelings of shame and guilt. No other measures were collected to avoid contaminating the predicted emotion reduction effects. In line with prior research (Duhachek, Zhang, and Krishnan 2007), the follow-up emotions measure is the key dependent variable, and we controlled for initial emotions as a covariate.

Results

To test for emotional repair, for both shame and guilt, respectively, we conducted 2×2 ANOVAs in which the follow-up emotions measure was the dependent variable and the incidental emotions prime, the ad frame, their interaction, and initial emotion served as the covariates. In the case of shame, both the interaction term ($F(1, 59) = 6.71$, $p < .01$) and the initial shame factors ($F(1, 59) = 10.78$, $p < .0001$) were significant. In support of H_{2c}, follow-up contrasts revealed that among participants primed with shame, those exposed to the shame-compatible (others-as-observers) advertisement showed significantly greater reduction in shame than those exposed to the incompatible (others-as-sufferers) advertisement ($M_{shame-observe-time2} = 3.25$, $M_{shame-suffer-time2} = 4.80$; $F(1, 59) = 7.22$, $p < .009$; $\omega^2 = .08$), after we controlled 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 the initial guilt factors ($F(1, 59) = 5.78$, $p < .02$) were significant. In support of H_{2c}, follow-up contrasts revealed that among participants primed with guilt, those exposed to the guilt-compatible (others-as-sufferers) advertisement showed significantly greater reduction in guilt than those exposed to the incompatible (others-as-observers) advertisement ($M_{guilt-suffer-time2} = 4.35$, $M_{guilt-observe-time2} = 5.75$; $F(1, 59) = 13.41$, $p < .0005$; $\omega^2 = .13$), after we controlled 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 ($M_{shame-suffer-time2} = 4.53$, $M_{shame-observe-time2} = 3.44$; $F(1, 59) = 5.29$, $p < .03$; $\omega^2 = .05$). Table 3 reports the means for Study 4.

Discussion

The emotion repair data, along with Study 3's findings, suggest that when participants are exposed to compatible appeals that are likely to exacerbate negative self-conscious emotions, they 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. A 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 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

We designed Study 5 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 that measured the 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 advertisement as those primed with shame. Similarly, people who are chronically prone to guilt will show similar effects in response to the guilt-compatible advertisement as those primed with guilt. Thus, in this study, we administered the TOSCA, presented participants with one of the two antidrinking advertisements, and then assessed participants' drinking intentions.

Procedure

Two hundred 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) antidrinking advertisement. Next, we measured participants' intentions to consume alcohol, following the procedures used in Study 1.

The TOSCA-3 requires each participant to respond to 11 scenarios. Each scenario is accompanied by a list of four possible responses that 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

Table 3
STUDY 4 RESULTS: COMPATIBILITY LEADS TO EMOTION REPAIR

	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

scale (1 = "not likely," and 5 = "very likely"). For our purposes, we averaged the shame responses for the 11 scenarios to create a shame-proneness scale (α = .66). Similarly, we computed a guilt-proneness scale, using the guilt responses to all 11 scenarios (α = .73).

Results and Discussion

We first examined the effect of shame proneness and ad frame on participants' intentions to drink, following the guidelines outlined in 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 that 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 advertisement. Consistent with our theorizing that incompatibility does not produce defensive processing, shame proneness was not related to drinking intentions in response to an incompatible advertisement.

Next, we 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). We conducted follow-up analyses on the simple slopes of guilt proneness within each ad frame to examine the effect of guilt proneness on intentions. As we 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 previous results showing that guilt-compatible appeals backfire on people who are sensitive to feeling guilt. These results provide convergent evidence for our prediction that compatible advertisements are less persuasive and show that our effects hold for people chronically sensitized to shame or guilt.

GENERAL DISCUSSION

This article 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 advertisements were motivated by emotion repair and processed the advertisements in a defensive manner.

Theoretical Contributions and Directions

Our findings reveal a reversal of the effects reported by DeSteno and colleagues (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 viewed as either more or less likely depending on the frame of reference the consumer considers. When people think about their own actions, shame- or guilt-inducing events appear less likely because of defensive processing. However, the increased scrutiny of the advertisement is persuasive in changing people's 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. Note that in the context of compatibility effects, our studies found that compatibility backfires, whereas incompatibility is no more persuasive than control conditions. Further research is needed to identify conditions in which incompatibility may enhance persuasion.

Another contribution of this research is related to identifying a new mechanism through which emotion-specific compatibility effects operate. Although 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, in general, people repair negative mood states. Our results suggest that shame-laden (guilt-laden) consumers are particularly resistant to messages that 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 through 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—namely, defensive processing.

Prior research on emotions and information suggests that priming negative emotions can 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 on, 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 the critical importance of persuasion in the consumer health context underscore the need to examine compatibility as a theoretical issue. In addition, the effect sizes we reported in Study 2, which used an actual consumption variable, produced much

larger effects. The relatively greater verisimilitude we captured in this study suggests that compatibility-based defensive processing has potentially strong influences in this context.

Practical Contrbutions 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 antidrinking advertisements, concerns about binge drinking frequently center on "making a fool out of oneself" or "losing control and doing something bad" (Goldfarb Consultants 2001). 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 a person'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 has explained 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 and the broader milieu within which the advertisement will be embedded. For example, 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 simply on the basis of target audience profiles and budget constraints but also on the basis of the emotional environment the media content might create. Such decisions would result in a dramatic step forward in thinking about context effects on media effectiveness.

Appendix
OTHERS AS SUFFERERS AND AS OBSERVERS AD FRAMES
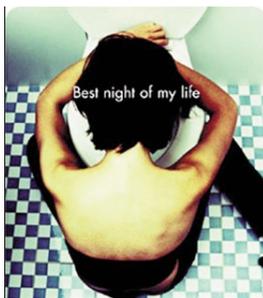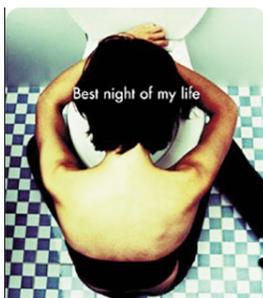

Think When You Drink!

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!

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!

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 Publications.

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.

Goldfarb Consultants (2001), "MADD: Underage Drinking Prevention," (September), (accessed November 24, 2009), [available at http://www.madd.org/docs/Goldfarb.pdf].

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 (2009), "Biases in Social Comparison: Optimism or Pessimism?" *Organizational Behavior and Human Decision Processes*, 108 (1), 39–52.

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 (3), 227–40.

Raghunathan, Rajagopal and Yaacov Trope (2002), "Walking the Tightrope Between Feeling Good and Being Accurate: Mood as a Resource in Processing Persuasive Messages," *Journal of Personality and 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, Pamplin College of Business, 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.