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## Original Research Articles

# Guilt and Shame: Environmental Message Framing Effects

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**The authors examine how two negative emotions—guilt and shame—influence responses to environmental ad messages framed as gains or losses. In Study 1, participants primed with guilt express higher intention to conserve water after they view a gain-framed water conservation ad; participants primed with shame express higher conservation intention after they view a loss-framed ad. Study 2 replicates and supports the proposed matching hypothesis using nonstudent adults. In Study 3, participants react to a recycling ad as they did in Studies 1 and 2 when they expend high effort by transcribing the recycle pledge before they view the ad, but not when they expend low effort by reading the pledge first. The findings overall provide converging evidence for the interplay between negative emotions and message framing. Theoretical and practical implications are discussed for developing environmental advertising message strategies.**

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As awareness of environmental issues heightens, consumers increasingly value environmental conservation behaviors such as saving water and recycling (Royne, Levy, and Martinez 2011). To deal with the growing demand for environmental conservation, much effort has been devoted to creating and implementing effective green campaigns (Hartmann and Apaolaza-Ibanez 2009; Royne et al. 2012; White, MacDonnell, and Dahl 2011). For example, the U.S. Department of Energy recently partnered with the Ad Council to run a national public service announcement to promote energy conservation (U.S. Department of Energy 2013). Despite such endeavors, we are still unclear about what types of ad messages are most

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persuasive in encouraging eco-friendly behaviors. Consequently, scholars have paid much attention to the dichotomous framework of message framing as a persuasive strategy (Cervellon 2012; Royne et al. 2012). That is, gain-framed messages promise consumers positive consequences if they comply with a particular advocacy; loss-framed messages warn of negative consequences for failing to comply.

Social marketing practitioners and researchers are greatly interested in the many personal, motivational, and contextual factors that influence persuasive impacts of environmental message framing. Researchers have recognized that mood states are greatly important in message framing effects (Keller, Lipkus, and Rimer 2003; Yan, Dillard, and Shen 2010). In the current research, we focus on two similar but different negative emotions: guilt and shame. Evidence suggests that guilt motivates approach tendencies and shame motivates avoidance tendencies (e.g., Schmader and Lickel 2006), but less attention has been paid to the impacts of guilt and shame on message framing persuasion. To fill the gap, we examine how guilt and shame influence attitudinal and behavioral responses to message framing in environmental advertising, as both emotions are known to drive consumers to feel morally responsible to behave pro-environmentally (Bamberg and Möser 2007).

Consumers frequently feel guilt and shame if they engage in immoral, unethical, and harmful consumption behaviors such as lying, littering, and binge drinking. Guilt and shame can cause consumers to refrain from socially undesirable behaviors (Tangney 1996) and can also determine whether they will be persuaded by advertisements (Agrawal and Duhachek 2010). Consequently, understanding advertising cues that may evoke incidental guilt and shame have practical and strategic implications for creators of environmental campaigns. Although guilt and shame are frequently interchanged terms (Benetti-McQuoid and Bursik 2005; Tangney 1990; Tangney et al. 1996), the psychology literature has shown that they can be separately activated by external cues (Agrawal and Duhachek 2010; Duhachek, Agrawal, and Han 2012) and can have distinct effects on consumer behavior (Tangney and Dearing 2002).

For this study, we avoid taking a valence approach that focuses on affect congruency in which positive feelings lead to positive judgments while negative feelings lead to negative judgments (Forgas 1995). We argue that the valence approach fails to show that distinct emotions of the same valence may evoke different judgments and choices (Griskevicius, Shiota, and Nowlis 2010). For example, guilt and shame, the focus of our research, have the same negative valence, but still have different influences on consumer judgment and behavior (Lerner and Keltner 2000; Maheswaran and Chen 2006).

Accordingly, the purpose of this research is to examine whether guilt and shame may cause message framing to have varying persuasive effects on eco-friendly attitude and intention. Specifically, we argue that consumers experiencing guilt will perceive gain-framed messages to be more persuasive, whereas consumers experiencing shame will perceive loss-framed messages to be more persuasive. We also introduce a third factor that further moderates the joint effect of emotion and message framing—effort invested in pledging to be environmentally responsible. That is, individuals who feel guilt (shame) will respond more positively to gain (loss) framing when they expend significant effort to make an environmental pledge but not when they invest little effort. Research on emotion and persuasion has suggested that the efficacy of the emotion-matching persuasive technique could be enhanced when message recipients expend more effort to process the message (DeSteno et al. 2004).

In the sections that follow, we first provide theoretical background of the key constructs to develop our hypotheses and then test the hypotheses with three studies. We conclude by discussing theoretical and managerial implications.

## THEORETICAL BACKGROUND

### Effects of Gain Versus Loss Message Framing

Persuasive messages may be framed to highlight benefits of adopting recommended behaviors (i.e., gain framing) or to highlight costs of neglecting the behavior (i.e., loss framing; Baek, Shen, and Reid 2013; Cervellon 2012). The dual-process model of approach and avoidance motivation (Elliot 2008) provides a theoretical framework for understanding that approach or avoidance motivations drive behavior regulation (Carver, Sutton, and Scheier 2000; Elliot 2008) and will thus determine how consumers will intend to interact with the environment (Shen and Dillard 2007). Indeed, message framing would serve as a proxy for approach and avoidance motivation (Mann, Sherman, and Updegraff 2004; Sherman, Mann, and Updegraff 2006; Updegraff et al. 2007).

Under the behavioral approach system (BAS), individuals have an appetitive motivation that is sensitive to cues of reward, nonpunishment, and escape from punishment. In contrast, under the behavioral inhibition system (BIS), they have an aversion motivation to avoid nonrewards, punishment, and

novelty (Carver and White 1994; Gray 1990; Shen and Dillard 2009). Thus BAS/BIS distinctions guide responses to advantage and disadvantage stimuli (Shen and Dillard 2007, 2009). Gain framing activates approach toward potential rewards or nonpunishment, while loss framing activates avoidance of potential punishments or nonrewards.

The distinct features of gain and loss framing also bear conceptual similarities to the two self-regulatory foci—promotion focus and prevention focus—proposed by regulatory focus theory (Higgins 1997). A promotion focus increases sensitivity to the presence or absence of positive or desirable outcomes, whereas a prevention focus increases sensitivity to the presence or absence of negative or undesirable outcomes (Lee and Aaker 2004). Persuasive messages can be framed as eager (e.g., achieving success) or vigilant (e.g., preventing failure) goal-pursuit strategies (Cesario, Grant, and Higgins 2004). Much research has examined the role of regulatory focus in message framing effects and has supported goal compatibility effects (Aaker and Lee 2001; Baek and Reid 2013; Kareklas, Carlson, and Muehling 2012; Kees, Burton, and Tangari 2010; Kim 2006; Park and Morton 2015; Sung and Choi 2011). In line with theoretical rationale drawn from regulatory fit theory (Aaker and Lee 2006; Avnet and Higgins 2006), advertising persuasion is enhanced when the specific message frame matches the audience's self-regulatory goals because they feel right about the experience and their goals are strongly engaged (Aaker and Lee 2006; Avnet and Higgins 2006; Cesario, Grant, and Higgins 2004).

Regarding the effectiveness of gain/loss framing, the message framing literature has produced mixed results. Some studies showed that loss frames have been shown to be more persuasive (e.g., Lord 1994; Meyerowitz and Chaiken 1987), while others showed that gain frames have also been shown to be most powerful (e.g., Maheswaran and Meyers-Levy 1990; Obermiller 1995). A partial explanation for the seemingly equivocal results is that positive or negative emotions can sometimes determine message framing effects (e.g., Keller, Lipkus, and Rimer 2003; Wegener, Petty, and Klein 1994). For example, Keller, Lipkus, and Rimer (2003) instructed participants to write a detailed description of happy (or sad) life events and then asked them to view an advertisement emphasizing the benefits of having (or disadvantages of not having) regular mammograms. They found that participants induced with a positive mood were more persuaded by the loss-framed message, whereas participants induced with a negative mood were more persuaded by the gain-framed message (for contrasting findings, see Yan, Dillard, and Shen 2010). The findings lend the support to the notion that the positive or negative valence of emotion being experienced affects perceptions of gain- and loss-framed messages. We question, however, whether specific emotions with the same negative valence might affect message framing effects. Specifically, we focus on whether guilt and shame moderate message framing effects: Would these negative emotions dictate when and how

gain or loss frames shape eco-friendly conservation attitudes and behaviors?

Few researchers have studied the influence of guilt and shame in advertising effectiveness. Duhachek, Agrawal, and Han (2012) manipulated message framings and negative emotions to study reactions to an anti-alcohol advertisement. They found a matching effect: When the ad message combined guilt appeals with gain frames or shame appeals with loss frames, irresponsible drinking behaviors were more strongly discouraged. At the same time, another stream of research distinguished between context-induced emotion that was incidental and irrelevant to the ad and ad-induced emotion that was integral and relevant to the ad (e.g., Chang 2006). Nonetheless, Duhachek, Agrawal, and Han (2012) used a single ad to induce emotions and message framing effects, so they did not show whether context-induced and ad-induced emotions would have similar effects on perceptions about message framings. However, advertising practitioners are legitimately concerned about the effects of various emotions on consumer reactions. For example, consumers who are watching Super Bowl games might transfer their excitement to commercials, but consumers watching crime shows might transfer their anger to subsequent advertisements.

Our empirical tests broaden the work of Duhachek, Agrawal, and Han (2012). We propose that elements external to an advertisement can trigger either guilt or shame, with varying effects on subsequent perceptions of message framings. To test our ideas, we first expose study participants to an ostensibly unrelated ad that induces guilt or shame and then present the target ad framed in gain or loss terms.

### Guilt and Shame

Guilt and shame are negative self-conscious emotions that generate self-evaluations (Fischer and Tangney 1995; Tracy and Robins 2004) and motivate people to do right and avoid wrongdoing (Kroll and Egan 2004). People may feel guilt and shame when they appraise events as personally relevant but incongruent with their identity goals (Tracy and Robins 2004).

However, the two constructs conceptually differ in terms of their focus on behavior versus self-concept (Lewis 1971). When people believe that they should have thought, felt, or behaved differently, they suffer *guilt* (Benetti-McQuoid and Bursik 2005). Consequently, they are more likely to feel responsible for past behaviors that violated the moral order and thus regret *what they have done* (Lewis 1971; Tangney and Dearing 2002; Yoon and Vargas 2010, 2011). In contrast, people who feel *shame* have global negative self-evaluations (Benetti-McQuoid and Bursik 2005) arising from concerns about how others evaluate them (Agrawal and Duhachek 2010). Viewing themselves through others' eyes, they thus regret *who they are* (Lewis 1971; Tangney and Dearing 2002).

Theoretically, guilt and shame are distinctly different in their relations to approach and avoidance motivations

(Schmader and Lickel 2006). The moral regulation literature (Sheikh and Janoff-Bulman 2010) suggests that guilt is associated with prescriptive morality promoting moral conduct ("should") through approach/activation, whereas shame is associated with proscriptive morality restraining immoral conduct ("should not") through avoidance/inhibition. The emotion-driven, guilt/shame distinction may have important consequences for the motivation-driven, approach/avoidance distinction.

"Situational factors that promote behavioral inhibition and the salience of punishments and threats will increase the likelihood of shame, whereas situational factors that promote behavioral activation and the salience of rewards and incentives will increase the likelihood of guilt" (Sheikh and Janoff-Bulman, 2010, p. 221). This statement is consistent with the empirical notion that guilt and shame arise from prescriptive and proscriptive moral regulation: that guilt is distinctly associated with and uniquely predicts approach motivations; that shame is distinctly associated with and uniquely predicts avoidance motivation; that approach orientation is positively related with guilt tendencies; and avoidance orientation is related with shame tendencies (Ferguson, Stegge, and Damhuis 1991; Sheikh and Janoff-Bulman 2010; Schmader and Lickel 2006).

People who adopt guilt-induced approach responses intend to repair harm they have caused; those who adopt shame-induced avoidance responses intend to hide from negative evaluations. To illustrate the distinction, consider Tom, who tosses an empty can into a trash bin and then realizes that he should have used the recycling bin.<sup>1</sup> Here, he faces two potential solutions for dealing with guilt or shame: rectify his action (approach) or detach from the situation (avoidance). The emotion literature (e.g., Tangney and Dearing 2002) indicates that if nobody witnessed his transgression, Tom will likely feel guilty. He can then alleviate his guilt by retrieving the can and putting it into the recycle bin (approach). If others saw him toss the can into the wrong bin, he feels shame and may want to run away from the scene (avoidance). One might argue that either approach or avoidance might relieve guilt/shame in either scenario, but approach ameliorates feelings of guilt without damaging self-image, because guilt's focus is on what he did (the "bad" act), not on who he is (the "bad" self). Unlike guilt, however, shame's focus is on who he is ("I am a bad person"), not what he did ("I did something bad"), so approach would not remedy inadequacies of the bad self (i.e., simply undoing one action does not necessarily make him a good person); here, avoidance is a more immediate solution for shame. That is, the action-focused guilt is repairable, but the self-focused shame is not.

Although literature suggests that guilt generally motivates approach tendencies and shame motivates avoidance tendencies, guilt and shame are so interrelated that sometimes both can motivate approach and avoidance. For example, when individuals are harmed by others, those who feel shame will

try to distance themselves from the event; those who feel guilt will try to make reparations. When individuals harm themselves, however, guilt or shame may evoke either approach or avoidance (Schmader and Lickel 2006).

In sum, guilt tends to be associated with approach motivation by focusing on positive end states (e.g., rewards and incentives), while shame tends to be associated with avoidance motivation by focusing on negative end states (e.g., punishments and threats), although guilt and shame are both pro-social emotions that lead to greater pro-environmental moral behaviors (Bamberg and Möser 2007). These ideas suggest the need for an interactive match between gain (loss) frames and guilt (shame) emotions for more positive consumer responses. The self-regulatory perspective of moral emotion could support our matching hypothesis of negative emotion and message framing (Sheikh and Janoff-Bulman 2010). Guilt involves approach tendencies and motivates reparative behaviors, including apologies, confessions, and pro-social actions. In contrast, shame involves avoidance tendencies and motivates hiding, withdrawal, and escape from the shame-inducing event (for a review, see Tangney and Dearing 2002). Furthermore, the dual-process model of approach and avoidance motivation (Elliot 2008) theoretically explains the psychological processes involved in message framing persuasion: A gain (loss)-framed persuasive message is likely to signal appetitive (aversive) motivations. Taken together, a match between emotion and message framing underlying approach/avoidance systems is believed to shape more favorable eco-friendly attitude and intention. Therefore, we propose the following hypotheses:

**H1a:** A gain-framed message will elicit greater eco-friendly intention than a loss-framed message for guilt-primed participants.

**H1b:** A loss-framed message will elicit greater eco-friendly intention than a gain-framed message for shame-primed participants.

### The Role of Effort Investment

An important moderator in environmental message processing is consumers' effort investment: the amount of time, energy, and resources they must invest in pursuing the advocated goals (Baek, Yoon, and Kim 2015; Yoon, Kim, and Baek 2016). When they expend more effort, they are likely to see the desired goals as more motivationally significant (Labroo and Kim 2009). For example, when study participants made environmental pledges requiring significant effort, they were more persuaded by environmental ads (Baek, Yoon, and Kim 2015).<sup>2</sup>

How will effort investment change the dynamics between guilt and shame emotions and reactions to gain and loss message framing? We propose that negative emotion will correspond with message framing as expected (hypothesis 1) when message recipients invest significant effort in pledging to be environmentally responsible, but less so when they invest little effort. In

other words, pledges requiring high effort will increase the interaction between emotion and framing. This prediction is drawn from the premise that effort typically strengthens one's motivation to process issue-relevant information (Baek, Yoon, and Kim 2015; Kim and Labroo 2011; Zhang et al. 2011). In a similar vein, DeSteno et al. (2004) has shown that the emotion-matching effects in persuasion are particularly pronounced when message recipients devote relatively higher effort toward processing the persuasive message; however, no matching effects emerge for those who process it less effortfully.

In the current context, highly motivated individuals who expend a high amount of effort are likely to process the advertising message more thoroughly and become sensitive to the match between one's guilty (shameful) emotion and gain (loss) message framing, but unmotivated individuals who expend little effort would not exhibit such an emotion-framing matching effect.

In sum, negative emotion and message framing will have a strengthened (attenuated) interaction when message recipients invest more (less) effort in pledging to be environmentally responsible because of heightened (diminished) level of motivation.

**H2:** Effort investment will enhance the emotion-message interaction effect. Specifically, participants who invest high effort in making an environmental pledge will show more pronounced gain-guilt and shame-loss matching effects (H1) in contrast to those who invest low effort.

We test hypotheses 1 and 2 in three studies. Motivation for Studies 1 and 2 was to investigate future water conservation intentions after individuals who feel guilt or shame view gain- or loss-framed water conservation ads (hypothesis 1). To test this idea, we conduct Study 1 in a controlled lab setting with a student sample. In Study 2, we expand the findings to a nonstudent adult population and compare the effects to a nonemotional baseline control group. Motivation for Study 3 is to further explore how effort investment (the second moderator) would change the dynamics of the relationships examined in Studies 1 and 2 (hypothesis 2). We vary the level of effort investment: high-effort participants transcribe the recycle pledge; low-effort participants read the ad. Figure 1 summarizes the conceptualization.

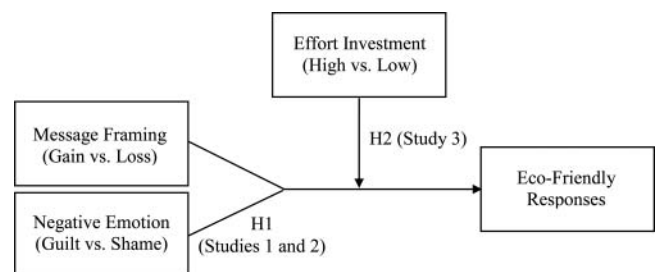


FIG. 1. Conceptual framework.

## STUDY 1

Study 1 was designed to offer an initial demonstration that a gain (loss)-framed message is particularly effective in shaping eco-friendly intention for guilt (shame)-primed participants (hypothesis 1).

### Method

*Emotion priming and pretest.* To activate feelings of guilt and shame, researchers have commonly primed study participants with an ostensibly unrelated task (e.g., Agrawal and Duhachek 2010; Sheikh and Janoff-Bulman 2010; Zemack-Rugar, Bettman, and Fitzsimons 2007). For example, Agrawal and Duhachek (2010) used incidental emotion-priming procedures such as a recall task and irrelevant advertising exposure to induce guilt or shame. Following their experimental procedures, we primed participants with guilt or shame in an ostensibly unrelated task.

For the priming ad, we focused on sexually transmitted infection (STI) because it is one of the most common infectious diseases among college students (Boudewyns and Paquin 2011) and is a significant health threat on college campuses (Tappe, Allensworth, and Grizzell 2010). In fact, more than half of the 20 million new STIs occur in people 15 to 24 years old (Centers for Disease Control and Prevention 2016). Previous research also has used public service announcements (PSAs) about getting tested for STIs to experimentally induce feelings of guilt and shame (Boudewyns, Turner, and Paquin 2013).

Therefore, we presented two ostensibly unrelated PSA ads to college student study participants. The first ad, encouraging viewers to be tested for STIs, primed participants with guilt or shame. The second ad encouraged water conservation framed as gains or losses.

We conducted a pretest ( $n = 72$ ) to ensure the first ad primed guilt or shame as intended. Pretest participants were from the same student population as the main experimental participants.

To develop the stimulus ad, we modified a PSA designed to encourage individuals to be tested for STIs. The ad induced guilt [shame]:

What an STD [sexually transmitted disease] taught me about guilt [shame]. I feel guilty [ashamed] about having a sexually transmitted disease. I let my partner [myself] down really badly. One in two young people will get a sexually transmitted disease by 25. Most won't know it. Get yourself tested for STDs. (See Appendix A)

After participants viewed the ad, they rated their feelings of guilt or shame (1 = *Not feeling this way at all*, 7 = *Feeling this way very strongly*). The results confirmed that participants who viewed the guilt ad reported more feelings of guilt than shame ( $M_{\text{Guilt}} = 4.38$  versus  $M_{\text{Shame}} = 3.03$ ;  $t = 4.96$ ,  $p < .05$ ), while those who viewed the shame ad reported more feelings of shame than guilt ( $M_{\text{Guilt}} = 3.16$  versus  $M_{\text{Shame}} = 3.98$ ;  $t = 2.89$ ,  $p < .05$ ).

*Participants and design.* Participating in the study for partial course credit were 275 undergraduate business students (53.1% men and 46.9% women; average age 19.6) from a Northeastern U.S. university. Participants were randomly assigned to one of four conditions in a 2 (incidental emotion: guilt versus shame)  $\times$  2 (message frame: gain versus loss) between-subjects design. The experiment was conducted in a controlled lab setting on computer-based software (MediaLab: <http://www.empirisoft.com>).

*Procedure and stimulus ads.* First, participants randomly viewed one of the two priming PSA ads emphasizing either guilt or shame experienced by those who contracted STIs. After participants viewed the priming ads, they viewed the target advertisement—a water conservation ad with gain- or loss-framed messages. The gain-framed message read: “Think about what will be gained if you save water. Saving water means saving money, reducing water pollution, and protecting the environment.” The loss-framed message read: “Think about what will be lost if you don’t save water. Failure to save water means wasting money, increasing water pollution, and hurting the environment” (see Appendix B). Next, participants were asked to identify the message conveyed in the ad. Adjective pairs on a 7-point scale included *Costs/Benefits*, *Losses/Gains*, and *Negative outcomes/Positive outcomes* ( $\alpha = .92$ ). As expected, participants perceived that the gain-framed message emphasized benefits/gains of saving water and that the loss-framed message focused on costs/losses of failing to save water ( $M_{\text{Gain}} = 6.20$  versus  $M_{\text{Loss}} = 3.53$ ;  $t = 5.77$ ,  $p < .05$ ).

*Measures.* For a dependent measure, participants indicated the likelihood that they would save water on a three-item, 7-point scale anchored by *Unlikely/Likely*, *Impossible/Possible*, and *Improbable/Probable* (Shen and Chen 2007), averaged to form an index for behavioral intention to save water, where a higher score indicates more positive intention ( $\alpha = .94$ ). In addition, participants answered demographic questions (age, gender, and ethnicity), indicated previous water conservation behavior (“Have you ever saved water?” *Yes/No*), and answered an open-ended question regarding their perceptions of demand characteristics (“What do you think was the purpose of this experiment?”). For randomization checks, we compared their demographic characteristics and previous water conservation experiences across conditions using chi-square tests and analyses of variance (ANOVAs) (see Table 1). Age, gender, ethnicity, and prior water-saving experience were not significantly different across experimental conditions. A suspicion probe revealed that no participants correctly guessed the hypothesis. Thus, we discuss those variables no further.

## Results

*Water-saving intention.* A 2 (incidental emotion: guilt versus shame)  $\times$  2 (message frame: gain versus loss) ANOVA revealed no main effects of emotions ( $F(1, 271) = .10$ ,  $p =$

TABLE 1  
Randomization Checks in Studies 1, 2, and 3

Variables	Gain framing	Loss framing	Guilt	Shame	Control
Study 1 <sup>a</sup>					
Age (mean)	19.7	19.6	19.7	19.7	
Gender (% male)	51.4%	54.7%	49.6%	56.6%	
Ethnicity (% white)	80.4%	81.8%	81.0%	81.2%	
Prior water-saving experience (% yes)	98.1%	97.0%	96.1%	99.0%	
Study 2 <sup>b</sup>					
Age (mean)	37.2	35.5	36.9	36.5	35.5
Gender (% male)	47.4%	49.1%	41.0%	54.1%	50.0%
Education (% college)	44.0%	37.9%	34.9%	51.8%	34.4%
Ethnicity (% white)	71.1%	73.5%	68.8%	72.6%	76.2%
Prior water-saving experience (% yes)	94.8%	94.9%	95.2%	94.3%	92.2%
Study 3 <sup>c</sup>					
Age (mean)	19.4	19.6	19.3	19.5	
Gender (% male)	57.5%	48.1%	51.4%	53.8%	
Ethnicity (% white)	76.6%	88.3%	81.4%	80.0%	
Prior recycling experience (% yes)	98.6%	98.7%	97.1%	100.0%	

Note. <sup>a</sup>For message framing, age:  $F(1, 273) = .32, p = .57$ ; gender:  $\chi^2(1) = .30, p = .63$ ; ethnicity:  $\chi^2(5) = 3.40, p = .64$ ; prior water-saving experience:  $\chi^2(1) = .25, p = .68$ . For emotion priming, age:  $F(1, 273) = .00, p = .99$ ; gender:  $\chi^2(1) = 1.31, p = .28$ ; ethnicity:  $\chi^2(5) = 6.58, p = .25$ ; prior water-saving experience:  $\chi^2(1) = 1.85, p = .37$ .

<sup>b</sup>For message framing, age:  $F(1, 230) = 1.13, p = .07$ ; gender:  $\chi^2(1) = .07, p = .90$ ; education:  $\chi^2(5) = 4.97, p = .42$ ; ethnicity:  $\chi^2(5) = 4.55, p = .58$ ; prior water-saving experience:  $\chi^2(1) = .00, p = 1.00$ . For emotion priming, age:  $F(2, 229) = .22, p = .80$ ; gender:  $\chi^2(2) = 3.02, p = .22$ ; education:  $\chi^2(10) = 13.59, p = .19$ ; ethnicity:  $\chi^2(10) = 4.93, p = .90$ ; prior water-saving experience:  $\chi^2(2) = .59, p = .75$ .

<sup>c</sup>For message framing, age:  $F(1, 148) = 3.27, p = .07$ ; gender:  $\chi^2(1) = 1.35, p = .26$ ; ethnicity:  $\chi^2(5) = 8.79, p = .19$ ; prior recycling experience:  $\chi^2(1) = .00, p = 1.00$ . For emotion priming, age:  $F(1, 148) = 2.37, p = .13$ ; gender:  $\chi^2(1) = .08, p = .87$ ; ethnicity:  $\chi^2(5) = 1.78, p = .94$ ; prior recycling experience:  $\chi^2(1) = 2.32, p = .22$ .

.76) and message frames ( $F(1, 271) = .01, p = .91$ ). However, as predicted, a significant interaction effect emerged for behavioral intention to save water ( $F(1, 271) = 20.44, p < .001$ ). As Figure 2 shows, simple effect analysis results showed that when feelings of guilt were induced, a gain-framed message rather than a loss-framed message motivated greater intention to conserve water ( $M_{\text{Gain}} = 6.53$  versus  $M_{\text{Loss}} = 6.02$ ;  $F(1, 271) = .965, p < .01$ ). In contrast, when feelings of shame were induced, a loss-framed message led to greater intention to save water as compared with a gain-framed message ( $M_{\text{Gain}} = 5.98$  versus  $M_{\text{Loss}} = 6.50$ ;  $F(1, 271) = 10.81, p < .01$ ). Therefore, hypotheses 1a and 1b were supported.

## Discussion

Consistent with our hypotheses, the findings from Study 1 supported the persuasive impact of incidental emotion and message framing on water-saving intention. Specifically, participants reported greater intention to conserve water in response to a gain-framed message than a loss-framed message when a preceding ad primed them to feel guilt; conversely, participants reported greater intention to save water in

response to a loss-framed message than a gain-framed message when the preceding ad primed them to feel shame.

## STUDY 2

We had three objectives in Study 2. First, we aimed to conceptually replicate the results from Study 1 with a nonstudent adult sample. We expected that higher eco-friendly responses would come from gain–guilt matches (hypothesis 1a) and loss–shame matches (hypothesis 1b). Second, we included a control condition to compare the effects to a nonemotional baseline. Third, considering that gain framing motivates a promotion focus, while loss framing motivates a prevention focus (Aaker and Lee 2001; Lee and Aaker 2004), we controlled for chronic regulatory focus as a key confounding factor for the findings obtained in Study 1.

## Method

*Pretest.* The objective of the pretest was to check and ensure that guilt and shame carry the same level of emotional intensity. Plutchik's (1984) wheel of emotions shows that emotions may vary in intensity. For example, as secondary

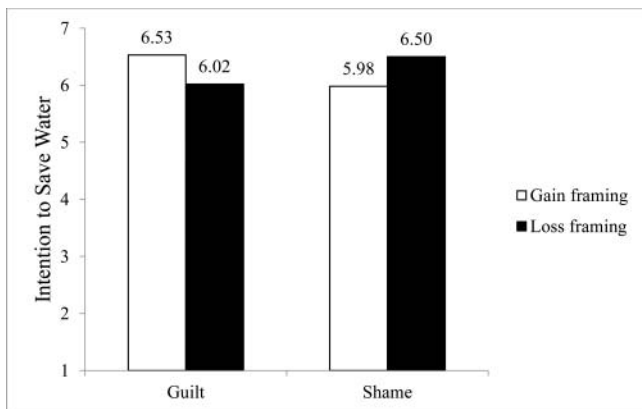


FIG. 2. Study 1 results: Effect of emotion and message framing on intention to save water.

and tertiary emotions, guilt and shame are more similar than are joy and disgust. To check the level of emotional intensity between guilt and shame, we conducted a pretest ( $n = 39$ ) using the same population as the main experimental participants. Participants indicated how intensely they were feeling guilt and shame (1 = *Very low intensity*, 7 = *Very high intensity*) after the emotion induction procedure. Emotional intensity between guilt and shame showed no statistical difference ( $M_{\text{Guilt}} = 5.75$  versus  $M_{\text{Shame}} = 5.27$ ,  $t = .87$ ,  $p = .39$ ).

**Participants.** We recruited 234 nonstudent adults (48.3% men and 51.7% women; average age 36.3) from Amazon Mechanical Turk (MTurk), an online panel provider frequently used in previous advertising research (Minton 2015; Minton et al. 2012; Muehling, Sprott, and Sultan 2014; Zhao, Muehling, and Kareklas 2014). MTurk samples have been shown to provide valid data and are considered to be more demographically diverse than college student samples (Buhrmester, Kwang, and Gosling 2011; Minton 2015).

**Design.** The study used a 3 (incidental emotion: guilt versus shame versus control)  $\times$  2 (message frame: gain versus loss) between-subjects design. The control condition allowed us to examine whether the matching effect between emotion and message framing on environmental persuasion indeed is stronger than the nonmatching effect.

**Procedure and stimulus ads.** Before the experiment, as confound checks, we asked participants to complete chronic regulatory focus as the individual difference measure (Haws, Dholakia, and Bearden 2010) and to indicate their previous water conservation behavior. The manipulations for incidental emotion (using STI ads) and message framing (using water conservation ads) were identical to those described in Study 1. Participants in the control condition proceeded to view the water conservation ad with gain- or loss-framed messages without viewing the STI priming ad.

**Measures.** We used the same manipulation check and dependent measure used in Study 1 and pretest. Finally, participants answered demographics questions and wrote about their

perceptions regarding the purpose of the experiment. Age, gender, education, ethnicity, and prior water-saving experience were not significantly different across experimental conditions. All participants in this experiment failed to correctly guess the hypotheses.

## Results

**Manipulation checks.** For emotion priming, participants who viewed the guilt-induced ad (versus shame-induced ad or control) reported more feelings of guilt than shame ( $M_{\text{Guilt}} = 5.93$  versus  $M_{\text{Shame}} = 3.81$  versus  $M_{\text{Control}} = 1.72$ ;  $F(2, 229) = 125.18$ ,  $p < .001$ ); those who viewed the shame-induced ad reported more feelings of shame than guilt ( $M_{\text{Shame}} = 5.45$  versus  $M_{\text{Guilt}} = 3.61$  versus  $M_{\text{Control}} = 1.64$ ;  $F(2, 229) = 123.74$ ,  $p < .001$ ). Thus, our emotion manipulation led participants to feel the intended emotions. However, the group difference was only relatively aligned with the intended manipulation. Although participants in the shame (guilt) condition felt shame (guilt), the two constructs are not completely orthogonal (for further discussion, see the Limitations section). For the message framing manipulation, participants reported that the gain-framed message emphasized benefits/gains of saving water and that the loss-framed message focused on costs/losses of failing to save water ( $M_{\text{Gain}} = 6.31$  versus  $M_{\text{Loss}} = 3.61$ ;  $t = 10.99$ ,  $p < .001$ ). Accordingly, the message framing manipulation was successful.

**Water-saving intention.** A 3 (incidental emotion: guilt versus shame versus control)  $\times$  2 (message frame: gain versus loss) ANOVA revealed no main effects of emotions ( $F(2, 226) = 2.68$ ,  $p = .07$ ) and message frames ( $F(1, 226) = .46$ ,  $p = .50$ ). But a significant two-way interaction effect emerged for water-saving intention ( $F(2, 226) = 5.58$ ,  $p < .01$ ). As shown in Figure 3, simple effect analysis results showed that when feelings of guilt were induced, a gain-framed message rather than a loss-framed message motivated greater intention to conserve water ( $M_{\text{Gain}} = 6.39$  versus  $M_{\text{Loss}} = 5.82$ ;  $F(1, 226) = 4.42$ ,  $p < .05$ ). In contrast, when feelings of shame were

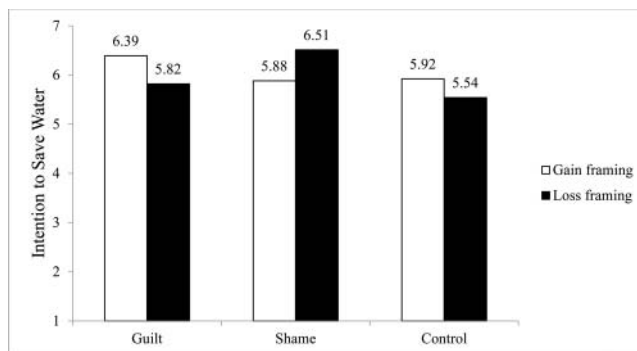


FIG. 3. Study 2 results: Effect of emotion and message framing on intention to save water.



induced, a loss-framed message led to greater intention to save water as compared with a gain-framed message ( $M_{\text{Gain}} = 5.88$  versus  $M_{\text{Loss}} = 6.51$ ;  $F(1, 226) = 5.43, p < .05$ ). Under the control condition, there was no statistical difference between a gain- and loss-framed message ( $M_{\text{Gain}} = 5.92$  versus  $M_{\text{Loss}} = 5.54$ ;  $F(1, 226) = 1.58, p = .21$ ). Therefore, hypotheses 1a and 1b were supported.

*Chronic regulatory focus as a confounding factor.* To check whether chronic regulatory focus interacted with emotion and message framing to drive the effects, we treated chronic regulatory focus as an independent variable. Researchers can measure chronic, stable, individual regulatory focus orientations, but they can also experimentally and temporarily manipulate regulatory focus orientations through priming tasks (e.g., Haws, Dholakia, and Bearden 2010; Higgins 1997; Lockwood, Jordan, and Kunda 2002).

Because chronic regulatory focus measured in this study was a continuous variable, we mean-centered the chronic promotion-focus and prevention-focus scores to run a spotlight analysis as recommended by Aiken and West (1991). Results showed that no three-way interactions among emotion, message framing, and mean-centered promotion-focus orientation emerged for water-saving intention ( $\beta = .07, t = .33, p = .74$ ). No other two-way interaction effects were observed (message framing  $\times$  mean-centered promotion focus,  $\beta = .15, t = .84, p = .39$ , emotion  $\times$  mean-centered promotion focus,  $\beta = -.10, t = -.88, p = .38$ ). The similar patterns also occurred when treating emotion, message framing, and mean-centered prevention-focus orientation as predictors. Neither the two-way (message framing  $\times$  mean-centered prevention focus,  $\beta = .18, t = 1.32, p = .19$ , emotion  $\times$  mean-centered promotion focus,  $\beta = -.13, t = -1.49, p = .14$ ) nor three-way interaction effects ( $\beta = .13, t = .63, p = .53$ ) on water-saving intention was statistically significant. Therefore, we confirmed that chronic regulatory focus did not confound the interactive effect of emotion and message framing.

## Discussion

Study 2 used nonstudent samples to replicate the Study 1 results while controlling for chronic regulatory focus as a potential confounder. Although findings from Studies 1 and 2 support our predictions, we did not consider a potential moderator: effort investment, which can affect responses to environmental persuasion. That is, consumers are likely to be more receptive to contextual influences in advertising when they have exerted effort in completing an eco-friendly request (Baek, Yoon, and Kim 2015; Yoon, Kim, and Baek 2016). If participants expend more or less effort in making an environmental pledge before they view the ad, would the effect show a different direction and impact? We explore this possibility in Study 3 by isolating the effects of effort investment in a more controlled setting. In Studies 1 and 2, we provided evidence for our matching hypothesis in a somewhat natural setting by

presenting a priming ad before presenting the target ad. In Study 3, we used a more conventional approach in a lab setting to examine the moderating role of effort: Before participants watched the ad, we asked them to read or transcribe the content of the pledge to induce the level of effort investment.

## STUDY 3

The goal of Study 3 was to test a boundary condition for the interaction found in Studies 1 and 2. In Study 3, we used different manipulations of emotion and message framing, while independently manipulating the level of effort investment.

### Method

*Emotion priming and pretest.* As in Study 1, we pretested the incidental emotion priming task ( $n = 57$ ) but used an essay-writing priming task (Fischhoff et al. 2003). In the guilt condition, participants wrote about an event that made them feel guilt; in the shame condition, they wrote about an event that made them feel shame. As anticipated, participants in the guilt condition reported guilt rather than shame ( $M_{\text{Guilt}} = 3.05$  versus  $M_{\text{Shame}} = 1.97$ ;  $t = 2.34, p < .05$ ); participants in the shame condition reported shame rather than guilt ( $M_{\text{Guilt}} = 3.13$  versus  $M_{\text{Shame}} = 3.96$ ;  $t = 2.75, p < .05$ ).

*Participants and design.* Participating in the study for partial course credit were 150 undergraduate students (52.7% men and 47.3% women; average age 19.4) from a Northeastern U.S. university. The study employed a 2 (incidental emotion: guilt versus shame)  $\times$  2 (message frame: gain versus loss)  $\times$  2 (effort investment: high versus low) between-subjects design.

*Procedure and effort investment manipulation.* To vary the level of initial effort investment, we adopted a marketing tactic environmental marketers commonly use to promote eco-friendly behaviors: an environmental pledge. Although pledges can take many forms, we focused on two approaches: (1) the participant expends relatively large effort in transcribing a message and (2) the participant expends relatively little effort in reading a pledge (Baek, Yoon, and Kim 2015; Yoon, Kim, and Baek 2016).

When participants arrived at the lab, they were randomly assigned to one of two emotion-induction conditions: guilt or shame. After they wrote the essay, those in the high-effort condition transcribed the recycle pledge; those in the low-effort condition read the pledge. Following is the text of the pledge employed in this study:

I will recycle my plastics, papers, and metal cans; I will use recycled-content products; I will avoid the use of disposable products whenever possible; I will tell people about how important it is to recycle.

Participants then signed their names at the bottom of the page. As a manipulation check on effort, we asked participants to rate how much effort they invested in completing the recycling pledge (1 = *Not at all*; 7 = *Very much*) (Baek, Yoon,

and Kim 2015). As anticipated, participants in the high-effort condition—those who transcribed and signed the pledge—reported more effort; those in the low-effort condition—those who read and signed the pledge—reported less effort ( $M_{\text{High Effort}} = 3.48$  versus  $M_{\text{Low Effort}} = 2.93$ ;  $t = 2.26$ ,  $p < .05$ ).

**Stimulus ads.** Participants then viewed the target advertisement, a recycling ad using a gain [loss] framed message: “Think about the benefits (costs) of recycling (not recycling). When we recycle (don’t recycle), we save (lose) huge amounts of water and energy” (see Appendix B). To ensure that the gain-framed message emphasized positive benefits and the loss-framed message highlighted negative consequences, we asked participants to judge the ad message with 7-point semantic differential items: *Costs/Benefits*, *Losses/Gains*, and *Negative outcomes/Positive outcomes* ( $\alpha = .95$ ). As anticipated, they perceived the gain-framed message as emphasizing the benefits/gains of recycling and the loss-framed message as focusing on the costs/losses of not recycling ( $M_{\text{Gain}} = 6.26$  versus  $M_{\text{Loss}} = 1.75$ ;  $t = 26.44$ ,  $p < .001$ ).

**Measures.** After participants viewed the ad, they indicated their attitude toward recycling on 7-point semantic differential items anchored by *Negative/Positive*, *Unfavorable/Favorable*, *Undesirable/Desirable*, and *Unnecessary/Necessary* (Baek, Yoon, and Kim 2015). The items were averaged to form an index for attitude toward recycling, where a higher score indicates more positive attitude ( $\alpha = .95$ ). Finally, participants answered demographics questions (age, gender, and ethnicity), indicated previous recycling experience (“Have you ever recycled materials?” *Yes/No*), and wrote about their perceptions regarding the purpose of the experiment. Age, gender, ethnicity, and prior recycling experience were not significantly different across experimental conditions. All participants in this experiment failed to correctly guess the hypotheses.

## Results

**Attitude toward recycling.** A 2 (incidental emotion: guilt versus shame)  $\times$  2 (message framing: gain versus loss)  $\times$  2 (effort investment: high versus low) ANOVA was performed on attitude toward recycling as the dependent variable. The analysis revealed no main effects of message framing ( $F(1, 142) = 2.81$ ,  $p = .10$ ), emotion ( $F(1, 142) = .01$ ,  $p = .94$ ), and effort investment ( $F(1, 142) = .04$ ,  $p = .84$ ). We did not hypothesize those main effects.

No other two-way interaction effects were found (message framing  $\times$  effort investment,  $F(1, 142) = 2.24$ ,  $p = .14$ ; emotion  $\times$  effort investment,  $F(1, 142) = .07$ ,  $p = .79$ ) except the interaction effect of emotion and message framing ( $F(1, 142) = 5.14$ ,  $p < .05$ ). As predicted, however, we obtained a significant three-way interaction of emotion, message framing, and effort investment on recycling attitude ( $F(1, 142) = 5.15$ ,  $p < .05$ ). To better understand the three-way interaction, we conducted two separate analyses to examine the emotion–

message framing interaction within the low- and high-effort conditions (see Figure 4).

Within the high-effort condition, we obtained a significant two-way interaction between negative emotion and message framing ( $F(1, 69) = 8.88$ ,  $p < .01$ ). Specifically, simple effect analysis results showed guilt-primed participants reported more favorable attitude toward recycling when exposed to a gain-framed (versus loss-framed) message ( $M_{\text{Gain}} = 6.25$  versus  $M_{\text{Loss}} = 5.36$ ;  $F(1, 69) = 4.08$ ,  $p < .05$ ). In contrast, shame-primed participants had more favorable attitude toward recycling when exposed to a loss-framed (versus gain-framed) message ( $M_{\text{Gain}} = 5.33$  versus  $M_{\text{Loss}} = 6.15$ ;  $F(1, 69) = 5.15$ ,  $p < .05$ ). The results were consistent with the results of Studies 1 and 2.

However, within the low-effort condition, the two-way interaction was not significant ( $F(1, 73) = .01$ ,  $p = .99$ ). Gain frames led to more favorable attitude toward recycling than loss frames, no matter whether participants were laden with guilt or shame. The findings overall are in line with hypothesis 2.

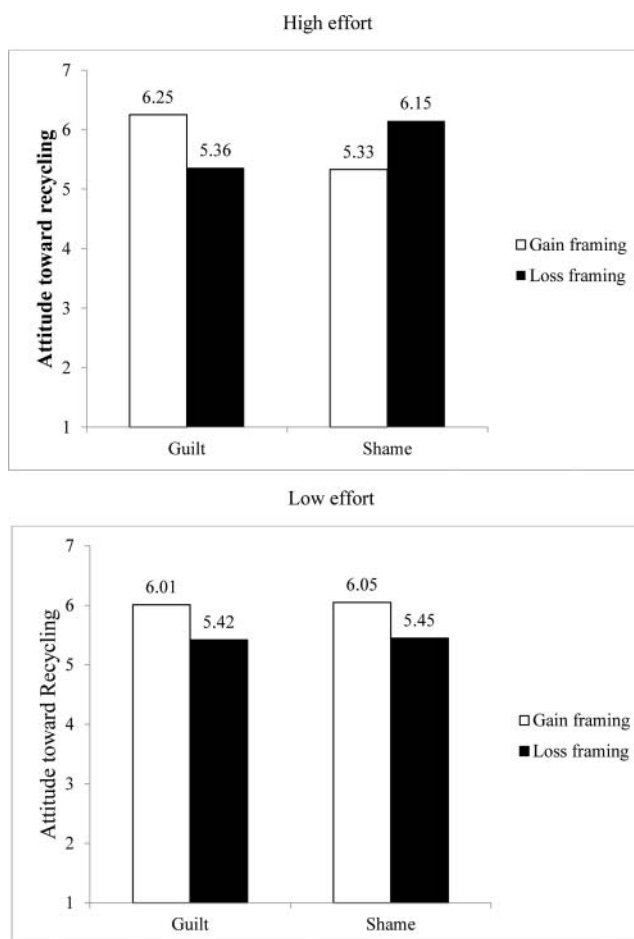


FIG. 4. Study 3 results: Effect of emotion, message framing, and effort investment on recycling attitude.

## Discussion

Extending the previous findings from Studies 1 and 2, we used an environmental message intended to promote recycling environmental behavior using attitude toward recycling behavior as a dependent variable in Study 3. When participants invested significant effort in making an environmental pledge, negative emotion fits strongly with message framing, but less so when participants invested low effort in the environmental pledge task.

## GENERAL DISCUSSION

In this research, we identify the conditions under which consumers become more or less likely to respond to environmental ad messages. The findings provide converging evidence for the interplay between negative emotions and message framing in two distinct domains of pro-environmental behaviors: water conservation and recycling. In Study 1, we find that guilt (or shame) paired with a gain-framed (or loss-framed) message is more persuasive in fostering eco-friendly attitude and behavioral intention. In Study 2, we provide additional support for the matching hypothesis using nonstudent samples while controlling for regulatory focus as a confounding effect. In Study 3, we demonstrate that the emotion–message matching effects are particularly pronounced when study participants invest effort to complete the environmental pledge before they view the target ad.

Our findings have several implications for researchers and practitioners. First, from a theoretical standpoint, our research integrates theoretical perspectives from the approach/avoidance motivation framework (Elliot 2008) and moral regulation literature (Sheikh and Janoff-Bulman 2010). Adding our findings to the literature advances current understanding of how negative emotions can determine the magnitude of subsequent environmental persuasions. Now researchers are better positioned to predict when and how negative emotions of guilt and shame may enhance or inhibit gain- and loss-framed environmental messages.

Second, the current research contributes to the persuasion literature (Yoon and Oh 2016; Kim et al. 2016). Previous research on affect and message framing has focused on valence-based mood states (happy versus sad) in examining relative effectiveness of message framing (Keller, Lipkus, and Rimer 2003; Yan, Dillard, and Shen 2010). Less attention, however, has been paid to how moral emotions of the same negative valence influence subsequent responses to and processing of the gain/loss frame. Only a few studies have examined the interactive effects of specific negative emotion and message framing. For example, Gerend and Maner (2011) showed that matching anger (fear) with a gain-framed (loss-framed) message increased fruit and vegetable consumption. We provide additional support for the emotion-matching hypothesis by identifying incidental guilt and shame as possible moderators of the persuasive framing effect.

Third, our results extend prior work on downstream effects of message-induced guilt and shame (Agrawal and Duhachek 2010). The findings suggest that individuals may be more likely to comply with ad messages when they view the messages after they have viewed unrelated stimuli, such as a different ad messages that evoke negative emotions. Our findings expand the work by testing the theorization in two contexts. In Studies 1 and 2, we find that a task that does not disrupt continuity of the main task (e.g., encountering an STI ad while flipping through a magazine) may cause an incidental emotion to carry over subtly. In Study 3, we find that a task that diverts individuals from the main task in which they are engaged (e.g., making an environmental pledge while flipping through a magazine) might have diverging emotion-triggering cues. Future research might examine whether and when the two types of tasks systematically diverge from each other.

Fourth, we are the first to examine the third moderator—effort investment—that reshapes the emotion-framing effect. We show that the emotion-framing matching effect can almost vanish when viewers fail to expend high effort in making an environmental pledge. Furthermore, while most emotion and message framing research (Agrawal and Duhachek 2010; Duhachek, Agrawal, and Han 2012) focuses on personal well-being (e.g., anti-binge drinking/responsible drinking), we consider collective well-being (i.e., pro-environmental behavior) and widen the scope of earlier findings (White, MacDonnell, and Dahl 2011).

From a practical standpoint, besides altering gain/loss framings of ad messages in environmental conservation campaigns, green marketers may benefit from using contextual cues that can induce guilt or shame. In real-world settings, environmental ads are typically embedded within various media contexts, such as TV programs and editorial contents. Because context-induced emotions are shown to influence consumer responses to embedded advertising messages (e.g., Baek and Reid 2013; Shapiro and MacInnis 2002), choosing an appropriate media vehicle that emotionally matches message framing is essential.

## Limitations and Directions for Future Research

The current research has some limitations that warrant future research. First, following previous literature, we consider guilt and shame to be separate constructs. Guilt and shame are commonly understood concepts, obviously similar, often causally related, and so intertwined that guilt might later transcend into shame, and vice versa. In fact, our emotion manipulation checks showed that both the guilt and shame conditions had mean scores somewhat close to the scale's neutral point. The mean score differences were only relatively consistent with the manipulation intention. Indeed, issues regarding operational distinctions between guilt and shame constructs are frequent (e.g., Agrawal and Duhachek 2010; Boudewyns, Turner, and Paquin 2013; Duhachek, Agrawal, and Han 2012). We attribute the pattern to two main factors:

(1) guilt and shame are theoretically distinct but deeply intertwined, and (2) we used a unipolar, not bipolar, scale to measure guilt and shame. Both emotions are negative and similar, so a unipolar scale may have failed to allow room for clear divergence. For example, an alternative measure to maximize the distinction between guilt and shame might use a bipolar scale anchored with *Guilt* (1) at one extreme and *Shame* (7) at the other extreme. Future research might vary and expand the question items to better distinguish between guilt and shame.

We asked participants to indicate their feelings of guilt or shame after the emotion priming task, but the guilt–shame manipulation might be better checked by using an alternative scenario-based self-report measure from the Test of Self-Conscious Affect (TOSCA-3; Tangney et al. 2000) designed to assess guilt and shame proneness. The TOSCA-3 has an advantage in that it avoids using the specific words *guilt* or *shame*, perhaps reducing the potential for distorted responses.

Another caveat is that social desirability bias may have influenced our results. Although our experiments were highly controlled, participants exposed to pro-environmental ads might have been primed to give socially desirable responses. A promising avenue for future research might be to examine whether individual social desirability tendencies influence the emotion-laden perception of message framing. Finally, we measured attitude and intention as indicators of persuasion. Future research might validate our findings in a field experiment setting in which actual behaviors are directly assessed.

## NOTES

1. In this example, Tom's action was self caused (versus other caused). Schmader and Lickel (2006) showed that such self-caused wrongdoings could evoke either guilt or shame where individuals tend to blend two concepts; individuals distinguish between guilt and shame more clearly for other-caused wrongdoings.
2. In the current context, effort investment does not include the lexical processing effort (i.e., the relative ease or difficulty involved in processing words in linguistic context; McDonald and Shillcock 2001) as well as the mental processing effort (i.e., cognitive capability that is allocated to process information; Briley and Aaker 2006; Schwarz and Clore 2006).

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## APPENDIX A

### STUDY PRIMES



#### Guilt Prime (Studies 1 and 2)

What  
an STD  
taught me  
about **guilt**.

"I felt **guilty** about  
having a sexually transmitted disease.  
I had let **my partner** down  
really badly"

Anonymous, 21

One in two young people will get  
a sexually transmitted disease (STD)  
by 25. Most won't know it.  
Get yourself tested for STDs.



#### Shame Prime (Studies 1 and 2)

What  
an STD  
taught me  
about **shame**.

"I felt **ashamed** about  
having a sexually transmitted disease.  
I had let **myself** down  
really badly"

Anonymous, 21

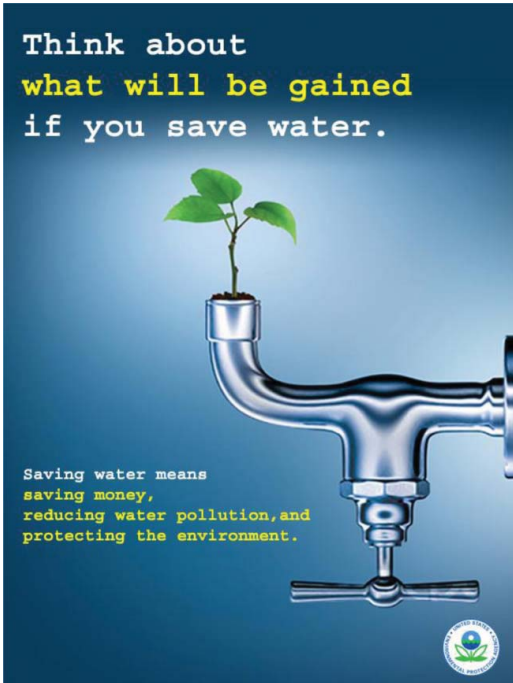
One in two young people will get  
a sexually transmitted disease (STD)  
by 25. Most won't know it.  
Get yourself tested for STDs.

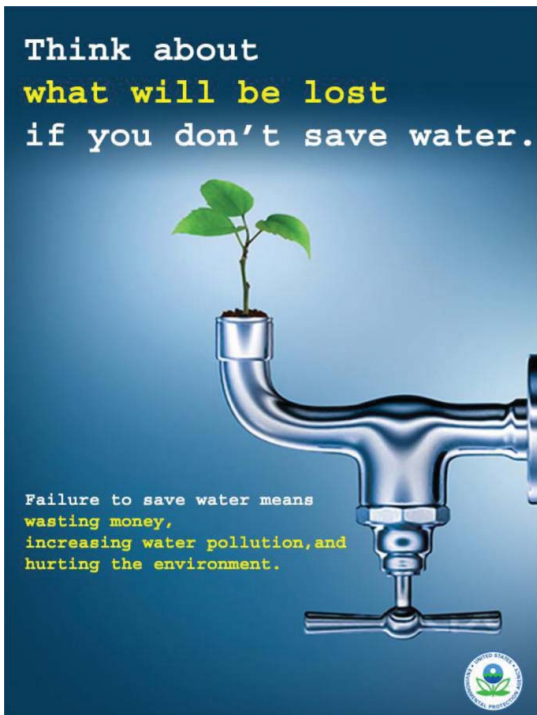
APPENDIX B

STUDY FRAMES

Gain Frame (Studies 1 and 2)



Loss Frame (Studies 1 and 2)



Gain Frame (Study 3)

**THINK ABOUT THE BENEFITS OF RECYCLING**

What will happen if we change our actions to take better care of our environment? The answer is simple.

**When we recycle ...**

- We will **sustain our environment for future generations**. Every ton of paper recovered for recycling is a ton that does not go to the landfill.
- We will **save huge amounts of water and energy**.
- We will **prevent pollution problems** caused by **decreasing the need to collect new raw materials**. It leads to **lower greenhouse gas emissions** that contribute to global climate change.
- We will **conserve our natural resources**, such as timber, water, and minerals.

To find out more about recycling information, call 1-800-255-1111

Loss Frame (Study 3)

**THINK ABOUT THE COSTS OF NOT RECYCLING**

What will happen if we don't change our actions to take better care of our environment? The answer is simple.

**When we don't recycle ...**

- We will **not sustain** our environment for future generations. **Every ton of paper discarded without recycling** is a ton that goes to the landfill.
- We will **lose huge amounts of water and energy**.
- We will **create pollution problems** caused by **increasing the need to collect new raw materials**. It leads to **higher greenhouse gas emissions** that contribute to global climate change.
- We will **waste our natural resources**, such as timber, water, and minerals.

To find out more about recycling information, call 1-800-255-1111