

# Personality and Social Psychology Bulletin

<http://psp.sagepub.com/>

---

## **An Introduction to Deviance-Regulation Theory: The Effect of Behavioral Norms on Message Framing**

Hart Blanton, Anne E. Stuart and Regina J.J.M. Van den Eijnden

*Pers Soc Psychol Bull* 2001 27: 848

DOI: 10.1177/0146167201277007

The online version of this article can be found at:

<http://psp.sagepub.com/content/27/7/848>

---

Published by:



<http://www.sagepublications.com>

On behalf of:



<http://www.spsociety.org>  
Society for Personality and Social Psychology

**Additional services and information for *Personality and Social Psychology Bulletin* can be found at:**

**Email Alerts:** <http://psp.sagepub.com/cgi/alerts>

**Subscriptions:** <http://psp.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.com/journalsPermissions.nav>

**Citations:** <http://psp.sagepub.com/content/27/7/848.refs.html>

>> [Version of Record](#) - Jul 1, 2001

[What is This?](#)

---

# An Introduction to Deviance-Regulation Theory: The Effect of Behavioral Norms on Message Framing

Hart Blanton

Anne E. Stuart

State University of New York at Albany

Regina J.J.M. VandenEijnden

The Netherlands Institute for Health Promotion and Disease Prevention

---

*The authors introduce a social judgment framework they term deviance-regulation theory. This theory proposes that people self-regulate more on the basis of the perceived social consequences of deviating from behavioral norms than on the basis of the perceived social consequences of conforming to behavioral norms. The implications of this model were explored in the context of persuasive health communication. Four studies demonstrated that health communication had its greatest effects on behavioral intention and behavioral willingness when it associated images with deviant behavioral alternatives. Thus, when participants believed their peers made healthy decisions, they were most influenced by negatively framed communication that emphasized the undesirable attributes of people who made unhealthy decisions. In contrast, when they believed their peers made unhealthy decisions, they were most influenced by positively framed communication that emphasized the desirable attributes of people who made healthy decisions.*

---

**A** form of social influence commonly used in mass communication is the image appeal. In this technique, people engaging in a target behavior are associated with a social image with the purpose of changing that behavior's prevalence. Consistent with prior research on message framing and health communication (see Rothman & Salovey, 1997, for review), we identify two ways in which image appeals can influence behavior. First, an image appeal can adopt a negative frame by linking a target behavior with a socially undesirable image. As an example, consider a university initiative to reduce binge drinking that links bingeing with irresponsibility and immaturity. Alternatively, an image appeal can adopt a positive frame by linking a target behavior with a socially

desirable image. As an example, consider a campaign that links the decision not to binge drink with responsibility and maturity. The purpose of the current research is to investigate the relative effectiveness of positively and negatively framed image appeals. We argue that the relative merits of each will depend on the perceived behavioral norms surrounding the target behavior.

## *Social Images and Behavioral Decisions*

A number of researchers have studied the effects of social images on behavioral decisions (e.g., Blanton, Gibbons, Gerrard, Conger, & Smith, 1997; Blanton et al., 2001; Chassin, Presson, Sherman, Corty, & Olshavsky, 1981; Gibbons & Gerrard, 1995, 1997; Leventhal & Cleary, 1980; Niedenthal, Cantor, & Kihlstrom, 1985; Niedenthal & Mordkoff, 1991). Although there are important distinctions in the various perspectives, most share the following assumptions: that people hold trait-based images or prototypes of the type of person who engages in different behaviors, that people assume that they themselves will become associated with these traits (either in their own eyes or in others') if they engage in similar actions, and finally that people base their behavioral decisions, in part, on the perceived social desirabil-

---

**Authors' Note:** The authors thank three reviewers, two who were anonymous and one who identified himself as Alex Rothman, for their thoughtful reviews. They also thank Meg Gerrard, Frederick X. Gibbons, Jim Jaccard, and the graduate students enrolled in "Comparison Processes" in the spring of 2000 for providing comments on earlier drafts. Correspondence concerning this article should be addressed to Hart Blanton, Department of Psychology, Social Science 112, University at Albany, Albany, NY 12222; e-mail: hblanton@csc.albany.edu.

*PSPB*, Vol. 27 No. 7, July 2001 848-858

© 2001 by the Society for Personality and Social Psychology, Inc.

ity of such associations. As a result of this process, individuals should be more likely to engage in actions that are associated with images consistent with their self-concepts, and they should be less likely to engage in actions that are associated with images inconsistent with their self-concepts (Gibbons, Gerrard, & Boney-McCoy, 1995). Because positive images are more characteristically consistent with views of the self, it is predicted that people will typically seek actions that associate them with positive images and avoid actions that associate them with negative images (cf. Swann, Griffin, Predmore, & Gaines, 1987).

An additional assumption implicit in the various theoretical perspectives is that social images vary in their relevance to the decision process. In this regard, a great deal of research and theory suggests that the images associated with uncommon or deviant actions should be given greater weight during behavioral decision making than the images associated with common or normative actions. From traditional attribution perspectives, for instance, one's actions are seen as telling more information about one's identity the more other people would not engage in similar actions (Jones & Davis, 1965; Jones & McGillis, 1976; Kelley, 1972; cf. Hilton & Slugoski, 1986). From research on the self, it appears that people identify more with their uncommon attributes than their common attributes. As examples, the self is represented more readily in terms of its rare or distinct attributes than its common attributes (McGuire & McGuire, 1980; McGuire, McGuire, Child, & Fujioka, 1978; McGuire & Padawer-Singer, 1976) and distinct attributes are viewed as more central to the definition of the self than common attributes (Lay, Burron, & Jackson, 1973; Miller, Turnbull, & McFarland, 1988; Nelson & Klutas, 2000; Nelson & Miller, 1995). Perhaps because of these reasons, distinct attributes are typically given greater weight than common attributes in global evaluations of the self (Ditto & Griffin, 1993; Marks, 1984) and people minimize the evaluative impact of negative attributes by projecting these on others (e.g., Sherman, Presson, & Chassin, 1984). In summary, a great deal of research and theory indicates that rare or uncommon attributes influence one's identity more than common attributes. This suggests that one's actions will influence one's identity to a greater extent the more they cause one to deviate from behavioral norms.

#### *Deviance Regulation Theory*

The apparent asymmetry in the degree to which deviant versus normative actions can influence identity is at the heart of deviance regulation theory. We argue that because deviating from behavioral norms will distinguish the self from others, people should be attentive to

the consequences of associating the self with the images that are linked to deviant actions. Thus, they should try to deviate from behavioral norms in ways that will associate the self with positive images and they should try to avoid deviating from behavioral norms in ways that will associate the self with negative images. In contrast, normative actions do not have the potential to distinguish the self from others. As a result, people should be less concerned about the overall positivity or negativity of the images linked to normative actions. Predictions derived from this theorized asymmetry were tested in a recent set of correlational studies by Blanton and Sanchez-Burkes (2000). Consistent with deviance regulation theory, they found that college students' ratings of the social desirability of various different health risk behaviors (e.g., binge drinking, having unsafe sex) were more predictive of future intentions to the extent that these actions were viewed as uncommon on campus.

The implication of these findings for image appeals is that communication should influence future intentions to a greater extent when the message frame associates an image with a deviant behavioral alternative instead of a normative behavioral alternative. Thus, returning to the question of the relative merits of positive versus negative message frames, our review suggests that a communicator should assess the behavioral norms in the target population before deciding on a message frame. For instance, to decrease the prevalence of binge drinking on a college campus where most students binge drink, a campus initiative should not adopt a negative message frame. In this environment, the image a student would acquire through binge drinking is a normal part of student identity. Image appeals that ignore this and target the binge-drinking image should thus fail to introduce information about how decisions related to binge drinking might influence a student's identity. Instead, the communication should adopt a positive frame. The image of students who do not binge drink can be informative in this context. Thus, a communication that stresses the positive attributes of students who do not binge drink can tell students how they might stand out from the crowd in positive ways by choosing not to binge. To the extent that this message content is accepted, it should then influence the students' intentions to binge in the future. In contrast, to decrease the prevalence of binge drinking on a college campus where most students do not binge drink, a campus initiative should adopt a negative frame and avoid a positive frame. By stressing the negative, the communication will tell students how they would stand out from the crowd in a negative way by choosing to binge drink. To the extent that this message content is accepted, it should then influence students'

intentions to binge in the future. These predictions are tested in the current studies.

#### STUDY 1

To test the predictions using experimental methods, it was necessary to manipulate the perceived normativeness of a target behavior. For many behaviors of interest, however, it would be difficult to manipulate perceived norms because many students in the participant pool would hold firm normative beliefs. This seems especially likely with visible behaviors, such as binge drinking or smoking. With this limitation in mind, Study 1 focused on the intention to get flu shots. It was felt that the perceived prevalence of getting flu shots could be manipulated with a college-student sample because most participants would not have observed their friends getting flu shots or have discussed this decision with them. At the same time, it was felt that the decision to get a flu shot could be linked to a social image of personal and social responsibility and that the decision not to get a flu shot could be linked to a social image of personal and social irresponsibility.

#### Method

##### PARTICIPANTS

This study was conducted during two consecutive fall semesters at State University New York (SUNY) at Albany. Participants were 124 undergraduate students ( $n = 55$  men and  $n = 69$  women) enrolled in introductory psychology during one of these semesters. The mean age of the sample was 18.5 years (range 17 to 21).

##### PROCEDURE

*Overview.* The design for this study was a 2 (behavioral norm: healthy or unhealthy)  $\times$  2 (message frame: positive or negative) between-subjects factorial. Participants were assigned to the four experimental conditions via block randomization by semester. Participants were run in groups of 5 to 20 people in a study involving images and health. All participants read information from two fictitious newspaper articles, ostensibly for the purpose of evaluating the quality of the articles. The first newspaper article gave bogus prevalence information about getting flu shots, after which participants completed a manipulation check to determine if the story influenced perceived distinctiveness. The second article introduced either a negatively framed or positively framed message about the personal attributes related to immunization. Afterward, participants rated their intentions to get a flu shot in the future.

The theoretical justification for using newspaper articles to deliver the experimental manipulations, instead of materials resembling those that would be used in actual public interventions, was based on the concern

that it would be difficult to change perceptions if the experimental stimuli appeared to be part of a concerted effort to change student behavior. It was felt that students might reject the message if the source was perceived as either coercive (Brehm & Brehm, 1981) or inexperienced (Petty, Cacioppo, & Goldman, 1984). The newspaper format avoided this by giving the appearance of well-researched objectivity, thereby making it possible to test the theoretical predictions.

*Norm manipulation.* In the first newspaper article, participants read a report that stated that students at SUNY at Albany were at risk of contracting the flu during the coming flu season and that an especially virulent strain of the flu virus was expected on campus this year. Participants then read that college students had a high risk of contracting the flu because they are in close proximity to others and that they recover slowly due to their high stress and active social lives. The article reported that student health services was encouraging students to get flu shots by providing shots free of charge to all full-time students and for a small charge to part-time students. In the healthy norm condition, participants read that past studies indicated that most and a majority of students would get flu shots. In the unhealthy norm condition, participants read that past studies indicated that only a few and a minority of students would get flu shots.

*Message frame.* The second newspaper article presented participants with the report of a recent study conducted in the psychology department that examined the personality correlates of immunization. In the positive-frame condition, participants read about the positive attributes of people who get flu shots. This message was designed in such a way that getting flu shots was associated with both the possession of positive attributes (e.g., considerate and responsible) and with the absence of an equal number of negative attributes (e.g., neither self-centered nor careless). In the negative-frame condition, participants read about the negative attributes of people who do not get shots (e.g., self-centered/careless and not considerate/not responsible). The content of the two messages was identical, with the only difference being the way in which the image information was framed.<sup>1</sup>

##### MEASURES

*Manipulation check.* To determine if the norm manipulation was effective, participants rated the likelihood that the average student would get a flu shot, using a 7-point Likert-type scale, with end points 1 = *not at all* and 7 = *extremely*.

*Intention.* The main variable of interest in the present study was participants' intention to get a flu shot. The question assessing this variable stated, "What is the

likelihood that you would get a flu shot?" with responses made on a 7-point Likert-type scale, with endpoints 1 (*very unlikely*) and 7 (*very likely*).

### Results

#### MANIPULATION CHECK

As predicted, participants in the healthy norm condition thought there was a greater likelihood that the average student would get a flu shot ( $M = 5.05$ ,  $SD = 1.14$ ) than participants in the unhealthy norm condition ( $M = 3.40$ ,  $SD = 1.45$ ),  $t(123) = 5.45$ ,  $p < .01$ . There were no effects of the message frame on the manipulation check, which would be expected because this item was assessed prior to the message-frame manipulation.

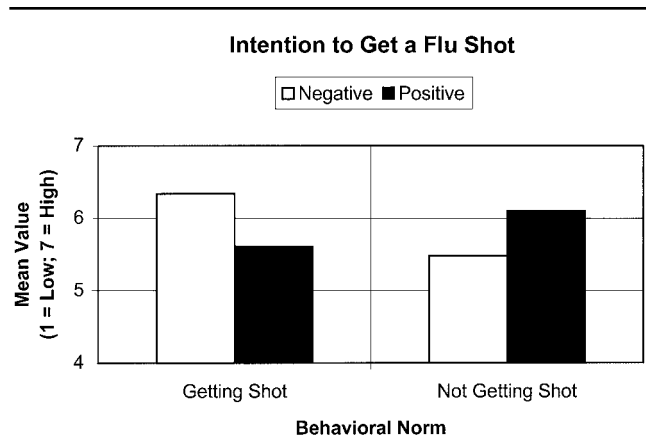
#### INTENTIONS

Our primary prediction was that participants would express a greater intention to get a flu shot in conditions in which the message frame targeted the deviant behavioral alternative. To test this prediction, a 2 (norm)  $\times$  2 (message frame) ANOVA was performed on the intention to get a flu shot. This analysis uncovered only the predicted cross-over interaction between norm and message framing,  $F(1, 120) = 8.47$ ,  $p < .05$ . As revealed in Figure 1, participants indicated that they would be more likely to get a flu shot when the message frame targeted a deviant behavior than when it targeted a normative behavior. Breaking this interaction into its simple main effects revealed that the negative message frame increased intentions ( $M = 6.34$ ,  $SD = 0.90$ ) to a greater degree than the positive frame ( $M = 5.61$ ,  $SD = 1.41$ ) when getting a shot was normative,  $F(1, 120) = 5.06$ ,  $p < .05$ . In contrast, the positive-message frame increased intentions ( $M = 6.10$ ,  $SD = 1.12$ ) to a greater degree than the negative frame ( $M = 5.48$ ,  $SD = 1.61$ ) when not getting a shot was normative,  $F(1, 120) = 3.54$ ,  $p < .06$ .

### DISCUSSION

#### Summary

The results supported the predictions. When participants thought that most of their peers were being healthy (i.e., getting flu shots), the most effective message frame linked an undesirable image with the unhealthy behavioral alternative (e.g., associating irresponsibility with people who do not get flu shots). When participants thought that most of their peers were being unhealthy (i.e., not getting flu shots), the most effective message frame linked a desirable image with the healthy behavioral alternative (e.g., associating responsibility with people who get flu shots). These findings suggest that image appeals should be tailored so that they associate social images with behaviors that deviate from prevailing norms. The primary shortcoming of



**Figure 1** Intention to get a flu shot as a function of behavioral distinctiveness and message frame in Study 1.

NOTE: Intention ranged from 1 to 7, with high scores representing greater intention to get a flu shot.

the current study, however, is that it provides no insights into mediation. The following two studies test a mediating model that focuses on evaluative extremity.

#### Evaluative Extremity

A great deal of research suggests that people make more extreme evaluations of people who deviate from behavioral norms than those who conform (Jones & Davis, 1965; Reeder & Brewer, 1979). There are a variety of reasons why this might occur. In situations in which there are normative pressures to conform, people will infer that all but the most extreme individuals will avoid the social consequences of deviating (e.g., Jones, Davis, & Gergen, 1961). Even in the absence of explicit pressures, people can infer normative pressure from behavioral consensus, and this too can influence evaluations of people who choose to deviate. Finally, deviance can lead to extreme inferences about others in contexts in which there are neither explicit or implicit conformity pressures. Ditto and Jemmott (1989) have argued that such extremization will occur as a result of the scarcity principle in social judgment. This is a basic judgment heuristic that causes a variety of attitude objects to be evaluated more extremely when they are rare as opposed to common. With evaluations relevant to the self, for instance, scarcity has been shown to extremize evaluations of one's personal abilities (Frieze & Weiner, 1971), one's health (Jemmott, Ditto & Croyle, 1986), and one's personality (Ditto & Griffin, 1993).

In summary, there is a solid theoretical basis for predicting that those deviating from behavioral norms will garner more extreme evaluations than those conforming to behavioral norms. It may then follow that behavioral norms alter the degree to which image appeals can make people seem extreme for their actions. Norms

would thus determine how negatively a person can be characterized using a negative frame and how positively a person can be characterized using a positive frame.

#### STUDIES 2 AND 3

The mediation model was tested in two studies. In Study 2, we manipulated the perceived norms surrounding flu shots and then had participants read the negatively framed message linking negative attributes to people who do not get flu shots. Participants in this study then completed mediation questions assessing how negatively they evaluated people who do not get flu shots. Following this, they rated their intention to get a flu shot in the future. In Study 3, we again manipulated perceived norms, but this time we had participants read the positively framed message linking positive attributes of those who do get flu shots. Afterward, participants completed the mediation questions assessing how positively they evaluated people who do get flu shots. Following this, they rated their intention to get a flu shot in the future. The reason for testing predictions in two studies was that by having each study focus on only one mediator at a time, participants were not asked to make subtle distinctions between how positively they evaluated someone who performs an action versus how negatively they evaluated someone who does not perform an action.

#### Procedure

Forty students participated in Study 2 ( $n = 10$  male and  $n = 30$  female) and 40 separate students participated in Study 3 ( $n = 10$  male and  $n = 30$  female). After reading the two newspaper articles used in Study 1, each participant rated either the typical person who does get a flu shot in terms of positivity (Cronbach's  $\alpha = .85$ ) or the typical person who does not get a flu shot in terms of negativity (Cronbach's  $\alpha = .89$ ). To provide participants with a meaningful metric against which to evaluate these individuals, they were asked to rate how positively or how negatively they evaluated these individuals in comparison to the average student at the University at Albany. Specifically, they were asked to rate "How responsible [irresponsible] is someone who gets [does not get] a flu shot?" "How considerate [inconsiderate] is someone who gets [does not get] a flu shot?" and "How positive [negative] is your evaluation of someone who gets [does not get] a flu shot?" Each question was made on an 11-point scale, where a low score indicated that the person was evaluated no differently than the average student at SUNY at Albany and a high score indicated that the person was evaluated much more positively (or negatively) than the average student at SUNY at Albany. After making their evaluations, participants then reported their intention to get flu shots. This question was worded the same as in

**TABLE 1: Mediation Analysis for Flu Shot Intentions in Studies 2 and 3**

	<i>Negative Evaluation</i>	<i>Intention</i>	<i>Adjusted Intention</i>
<i>Negative Frame</i>			
Study 2			
Unhealthy norm	4.57	6.90	7.20
Healthy norm	6.33	8.45	8.16
	$p < .02$ $\eta^2 = .15$	$p < .05$ $\eta^2 = .10$	$p = .23$ $\eta^2 = .04$
<i>Positive Frame</i>			
Study 3			
Unhealthy norm	7.96	9.05	8.88
Healthy norm	6.82	8.15	8.31
	$p < .02$ $\eta^2 = .14$	$p < .06$ $\eta^2 = .09$	$p = .27$ $\eta^2 = .03$

NOTE: Effects of behavioral norms on evaluations of people who do or do not get flu shots (column 1) and on the behavioral intention to get a flu shot (column 2). The adjusted intention is the expected value of the behavioral intention at the average evaluation.

Study 1, only it was made on an 11-point Likert-type scale with values ranging from 0 to 10.

#### Results

*Study 2.* As presented in Table 1, the negatively framed message led to greater intention to get a flu shot when getting a shot was normative ( $M = 8.45$ ,  $SD = 2.39$ ) as opposed to deviant ( $M = 6.90$ ,  $SD = 2.40$ ),  $F(1, 38) = 4.17$ ,  $p < .05$ . In association with this, the negative frame resulted in more negative evaluations of people who did not get shots when getting a shot was normative ( $M = 6.33$ ,  $SD = 2.36$ ) as opposed to deviant ( $M = 4.57$ ,  $SD = 1.95$ ),  $F(1, 38) = 4.57$ ,  $p < .02$ . Consistent with mediation, the effect of the norm manipulation on behavioral intention became nonsignificant after controlling for its effect on evaluative extremity,  $F(1, 37) = 1.53$ ,  $p > .20$ . In terms of effect size, the inclusion of the mediator translated in a drop in the effect of norm on intention from  $\eta^2 = .10$  to  $\eta^2 = .04$ .

*Study 3.* As presented in Table 1, the positively framed message lead to a greater intention to get a shot when getting a shot was deviant ( $M = 9.05$ ,  $SD = 1.31$ ) as opposed to normative ( $M = 8.15$ ,  $SD = 1.66$ ),  $F(1, 37) = 3.56$ ,  $p < .06$ . Moreover, participants had more positive evaluations of people who got shots when getting a shot was deviant ( $M = 7.96$ ,  $SD = 0.90$ ) than when getting a shot was normative ( $M = 6.82$ ,  $SD = 1.83$ ),  $t(37) = 6.09$ ,  $p < .02$ . Finally, when the effect of the norm manipulation on evaluative extremity was entered as a covariate, the effect of the manipulation on behavioral intention dropped to nonsignificance,  $F(1, 36) = 1.27$ , n.s. In terms of effect size, the inclusion of

a mediator translated in a drop in the effect of norm on intention from  $\eta^2 = .09$  to  $\eta^2 = .03$ .

## DISCUSSION

In combination with Study 1, these findings support the proposed framework in which messages are viewed as more socially informative the more the message frame targets a deviant behavioral alternative. As predicted, the norm manipulation influenced whether a positive image appeal led to a more positive evaluation of people who engage the targeted action and whether a negative image appeal led to a more negative evaluation of people who engage in the targeted action. These effects were then shown to mediate the effects of behavioral distinctiveness and message frame on behavioral intention.

The implication of the first three studies appears to be that image appeals should be framed to the norms within the target population. There are a number reasons to be hesitant about drawing this conclusion, however. For one, the first three studies experimentally manipulated the behavioral norms. It may be the selection effects that determine variation in norms within a population typically introduce psychological processes that interfere with the proposed framing effect. A second concern is related to the level of investment a person has in the target behavior. It seems unlikely that flu-shot decisions are important to most college students. It may be that the observed framing effect would thus not occur when image appeals seek to influence more significant behavioral decisions. An additional concern relates to the nature of the health communication. The social images in the first three studies were communicated through the use of a bogus newspaper article presenting empirical data on personality attributes. It may be that the observed framing effects would not replicate if the materials presented subjective evaluations as part of an explicit effort to change behavior. Finally, the outcome variable in each of these studies was the intention to engage in a health-promoting behavior in the future. However, the proximal determinate of many health outcomes is not the intention to engage in health-promoting behavior so much as it is the willingness to engage in a health risk behavior (see Gibbons & Gerrard, 1997). Given this list of concerns, we conducted a final study that would determine if the data pattern in the first three studies would replicate in a study that addressed each of these issues.

## STUDY 4

### Overview

This study investigated the effects of normative assumptions and message framing on willingness to have

sex without a condom. Participants were 192 college students in the introductory psychology pool at the University at Albany who were assigned via block randomization by gender ( $n = 74$  male,  $n = 118$  female) to one of two experimental conditions and who participated in two waves of an experimental study. At Time 1, participants estimated the norms for condom use among same-sex students on campus. Also at this time, participants completed a number of individual difference measures (e.g., self-esteem) and measure of sexual attitudes, which are not the focus of the current findings and will not be further discussed. Participants returned 2 weeks later and were exposed to either a set of positively framed messages promoting condom use or to a set of negatively framed messages promoting condom use. These materials were described as part of a health campaign to reduce unprotected sex on campus. In these materials, participants read four bogus testimonials by students on campus arguing for the importance of condom use. In the positively framed message condition, these students expressed positive opinions about people who use condoms, using such words as *mature*, *responsible*, *respectful*, and *smart*. In the negatively framed condition, these students expressed negative opinions about people who do not use condoms, using such words as *immature*, *irresponsible*, *disrespectful*, and *stupid*. After reading each statement, participants completed a number of bogus ratings about the testimonials (which were designed to reinforce the cover story that we were interested in assessing their reactions to the health communication). Participants then completed an inventory assessing their willingness to engage in unprotected sex. It was predicted that participants who assumed a high rate of condom use on campus at Time 1 would show a lower willingness to have unprotected sex at Time 2 if they were exposed to a negatively framed message. In contrast, it was predicted that participants who assumed a low rate of condom use on campus at Time 1 would show a lower willingness to have unprotected sex at Time 2 if they were exposed to a positively framed message.

### Measures

*Perceived norms.* The behavioral norms construct was expanded from the previous studies to consider four behavioral alternatives. In the first two studies, participants were led to believe that most students on campus either did or did not engage in the target behavior. This makes sense with flu shots because it is an either/or activity. With condom use, however, people can range in their behavior from using condoms 100% of the time to not using them at all. Our measure of perceived norms was thus constructed so that it could detect this variation. Participants made four ratings about condom use on campus. In the first question, they estimated the

percentage of sexually active students who fell in four mutually exclusive categories, with the total adding to 100%. The first category was students who use condoms “every time they have sex.” The second, third, and fourth categories were the percentage of students who used condoms “most of the time they have sex (more often than not but not every single time),” “some of the time they have sex (use condoms often but more typically do not),” or “none of the time they have sex.”

From these percentage estimates, a single score was given to represent the assumed norm for condom use on campus, with values ranging from 1 to 4. This number represented participants’ modal categorization for the other same-sex, sexually active college students on campus (in the case of ties, the average of the modes was used to represent the norm). Thus, participants receiving the highest score of a 4 were those who assumed it was most common for their same-sex peers to use condoms every time they have sex, whereas those receiving the lowest scores of a 1 were those who assumed it was most common for their same-sex peers not to use condoms any of the times they have sex. We predicted that the positive frame would be more effective in lowering willingness the more unhealthy the assumed norm, whereas the negative frame would be more effective in lowering willingness the more healthy the assumed norm.

*Willingness.* Willingness to have unprotected sex at Time 2 was assessed using a 12-item scale. In each question, participants were presented with a hypothetical situation in which they were to imagine an opportunity to have unprotected sex. They then rated their willingness to have sex without a condom (e.g., “If I had recently met a sexually attractive person, I would be \_\_\_\_\_ to have unprotected sex”; “If I had recently met a sexually attractive person who did not seem like the type to have an STD, I would be \_\_\_\_\_ to have unprotected sex”). Ratings were made on 21-point scales, with  $-10 =$  *extremely unwilling*,  $0 =$  *neither willing nor unwilling*, and  $+10 =$  *extremely willing* (Cronbach’s  $\alpha = .94$ )

## RESULTS

The descriptive statistics for perceived norms and willingness shows that prior to the experimental manipulation, both groups assumed that their same-sex peers were using condoms right around a value of 3 = *most of the time* ( $M = 2.93$ ,  $SD = 0.75$  for positive frame;  $M = 2.89$ ,  $SD = 0.83$  for negative frame). In terms of the distribution of responses, 2% of the participants thought it was normative for their peers to use condoms none of the time they had sex, 30% thought it was normative for their peers to use condoms some of the time they had sex, 46% thought it was normative for their peers to use condoms most of the time they had sex, and 22% thought it was

**TABLE 2:** Willingness to Have Unprotected Sex as a Function of Perceived Norms, Message Framing, and Cross-Product in Study 4

<i>Independent Variable</i>	B	<i>t Value</i>	<i>Significance</i>
Constant	-7.78	3.96	.01
Perceived norm (PN)	1.23	1.89	.01
Message framing (MF)	7.71	2.81	.06
PN $\times$ MF	-2.92	3.20	.01

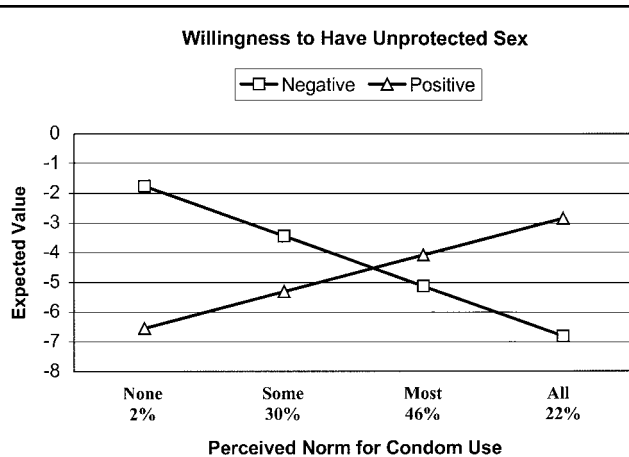
NOTE: Willingness to have unprotected sex is scaled from  $-10$  (*extremely unwilling*) to  $+10$  (*extremely willing*). Perceived norm is scaled from 1 to 4, whereby low values represent an assumption that it is normative not to use condoms and high values represent an assumption that it is normative to use condoms. Message framing is dummy coded so that 0 = positive frame and 1 = negative frame. Regression coefficients are the unstandardized estimates.

normative for their peers to use condoms every time they had sex.

After the experimental manipulation, both of the experimental groups were generally unwilling to have sex without a condom, inasmuch as the mean willingness scores in both the positive frame condition ( $M = -4.39$ ,  $SD = 5.10$ ) and the negative frame condition ( $M = -4.88$ ,  $SD = 4.65$ ) were significantly less than the scale neutral point of zero,  $t(104) = 8.73$ ,  $p < .001$ , and  $t(92) = 9.89$ ,  $p < .001$ , respectively. These scores did not differ from one another by message frame,  $t(196) < 1$ , n.s., indicating that neither frame was more effective than the other overall in reducing the willingness to have unprotected sex. The primary prediction for this study, however, was that the effect of framing would vary as a function of the perceived norm. To test this, the willingness to engage in unprotected sex was regressed on the perceived norm for condom use on campus, a dummy code for message frame (0 = positive frame, 1 = negative frame), and the cross-product between norm and message frame. To provide a conservative test of the unique contributions of the predicted interaction, the cross-product term was entered in the second step of a hierarchical regression, with the two main effects in the first step. As predicted, inclusion of the cross-product lead to a significant increase in the amount of variance accounted for,  $r^2_{\text{change}} = .05$ ,  $F(1, 178) = 10.25$ ,  $p < .01$ . The unstandardized regression coefficients of the final block of this equation are shown in Table 2 and the nature of the interaction effect ( $B = -2.92$ ,  $p < .01$ ) is charted in Figure 2. Consistent with the model, the negative frame was associated with decreased willingness to have unprotected sex as the assumed norm became more safe, whereas the positive frame was associated with decreased willingness to have unprotected sex as the assumed norm became less safe.

To provide increased confidence that the observed interaction was not due to the effects of third variables that were confounded with normative assumptions, a set





**Figure 2** Expected value of willingness to have unprotected sex in Study 4 as a function of perceived behavioral norms and message frame.

NOTE: Behavioral norm values of none, some, most, and all convey participants' perceptions of the amount of time other same-sex college students use condoms when they have sex. The percentages at the bottom convey the sample distribution of the behavioral norm variable. Willingness ranged from -10 to 10, with negative values indicating less willingness to have unprotected sex. The slope for behavioral norms on willingness in the positive frame is  $B = 1.23, p < .06$ , and the slope in the negative frame is  $B = -1.69, p < .01$ .

of covariates was entered into the regression equation. First and most important, an estimate of past behavior was entered. This was the self-rated percentage of times condoms were used in the past during sexual intercourse. In the case of virgins, the percentage listed was coded with a value of zero. To remove the statistical artifact associated with this coding scheme, a dummy code for virgin status was also entered. In terms of main effects, it was predicted that both virgin status and past condom use would predict decreased willingness to have sex without condoms in the future. In addition to these variables, two Time 1 attitude scores were entered. The first was the mean from a three-item measure of intention to use condoms. In these questions, participants rated the likelihood of using condoms in the future (e.g., "If I were going to have sex during the school year, I would use condoms"). The second score was the mean from a 12-item measure of attitudes toward sex. These questions presented the same scenarios as in the willingness questionnaire, except participants were asked to rate their willingness to have sexual intercourse. It was predicted that participants would show less willingness to have unprotected sex at Time 2 if they reported high intentions to use condoms and low willingness to have sex at Time 1. As a final covariate, we entered a dummy code for gender. Our past studies have shown women are typically less willing to have unprotected sex than men (e.g., Blanton et al., 2001) and so confounds between gender and normative beliefs could influence results.

When all of these covariates were entered into the equation, the predicted effect of each covariate was obtained ( $ps < .10$ ) and the interaction between perceived norms and message frame remained significant and in the same direction ( $B = -1.94, p < .01$ ). The observed relationship between perceived norms and message framing was thus robust and cannot be explained away as a result of the above-mentioned third-variable accounts.

## GENERAL DISCUSSION

### Summary

The results from the four studies provide strong support for deviance regulation theory. They demonstrate that image appeals can be made more effective by associating images with deviant behavioral alternatives rather than normative behavioral alternatives. This was shown to be true when behavioral norms were experimentally manipulated (Studies 1 through 3) and when normative assumptions were assessed (Study 4). Moreover, the predicted effects were found to generalize to both the intention to engage in a health-promoting behavior and to the willingness to engage in a health risk behavior. Finally, effects were found in a behavioral domain that was probably of little relevance to most college students (i.e., getting flu shots to prevent flu) and in a behavioral domain that would seem to be of great relevance (i.e., using condoms to prevent sexually transmitted diseases and pregnancy). With respect to mediation, the results from Studies 2 and 3 indicated that normative assumptions altered the potential for an image appeal to link extreme evaluations with an action. A focal question in future research will be determining if this mediator relationship is robust and if other mediating mechanisms underlie this framing effect.

### Competing Psychological Processes

It appears from these results that to lower the prevalence of a behavior in a community in which the behavior is normative, a positive frame should be used to emphasize the desirable attributes of people who deviate. In contrast, to lower the prevalence of a behavior in a community in which the behavior is nonnormative, a negative frame should be used to emphasize the undesirable attributes of people who deviate. Once the current theory is applied in community settings, however, any number of competing psychological processes may come into play, and these may alter predictions. For instance, an image appeal that criticizes the minority of students in a high school who smoke marijuana might have the unwanted effect of increasing the appeal of marijuana use among a subgroup of students who are looking for distinct ways of rebelling against societal norms. As a general piece of advice, we encourage inves-

tigators to consider competing psychological processes that may be operating in a population of interest before applying this model (see Salovey, Rothman, & Rodin, 1998, for a review of relevant theoretical perspectives).

As an example of a competing psychological process that one should consider, Rothman and Salovey (1997) have recently developed a model of message framing based on Kahneman and Tversky's (1979) prospect theory. Among other predictions, their framework argues for negative frames under conditions in which there are salient risks involved in the targeted behavior. For instance, one should typically use negative message frames about the health consequences of not getting regular mammograms because mammograms entail the risk of discovering the presence of cancer. In contrast to predictions made using Rothman and Salovey's model, the prediction made using deviance regulation theory as a guide is one that should use positive message frames to promote mammograms in contexts in which this behavior is nonnormative. To the extent that identity concerns are driving these decisions, we suspect that deviance regulation offers the better guide. We would argue that health communication should be constructed to emphasize the social consequences related to mammogram decisions, with the choice of message frames being guided by our model. To the extent that identity concerns are not driving these decisions but concerns for health outcome are, which seems likely with this case, we would argue that our model should not be used to guide interventions. Instead, communication should be constructed to emphasize the potential health consequences of one's actions, with the choice of message frames being guided by the Rothman and Salovey model.

#### *Message Framing Over Time*

Because our model argues that the social context determines the most appropriate message frame, neither a positively framed nor a negatively framed image appeal is viewed as inherently more effective in public communication (cf. Blanton et al., 2001). On further inspection, however, our model also predicts that a negative frame will exert a more stable influence on behavior over time. When a negative message frame is used in the way prescribed by the current model, it will try to lower the social desirability of engaging in a low-prevalence behavior. If this communication is effective, the prevalence of the target behavior will drop over time, and those who continue to engage in that behavior will be evaluated even more negatively as a result. In contrast, when a positive message frame is used as prescribed by the current model, it will raise the social desirability of engaging in a low-prevalence behavior. As that message takes hold, behavioral norms will change and the previ-

ously deviant behavior will then become more normative. If this occurs, a positive message frame will no longer be appropriate. Thus, our model suggests that when trying to increase the prevalence of a low-frequency behavior, one should start with a positive frame and then switch to negative frame when there is evidence that this message has effectively changed the prevailing norms. When trying to decrease the prevalence of a low-frequency behavior, however, one should start with a negative frame and stay negative over the long term.<sup>2</sup>

#### *When Behavioral Norms Are Not Known*

As a final issue, a difficulty must be addressed with respect to pairing message frames to behavioral norms. To apply our model, it is necessary for the target population to have certain beliefs about which actions are normative and which are deviant. However, people often have no idea of what others in their group are doing (see Kelling, 2000). In fact, this was demonstrated by our first three studies when we were able to manipulate normative beliefs through the use of bogus newspaper articles. When people are uncertain of what is normative, our model makes no predictions for how best to proceed. Given that it would be unethical to present fictitious information in a public communication, one possible response is to include information about the true behavioral norms in the population when delivering the message frame. Thus, one could state, "Most students practice safe sex; you will be one of the irresponsible ones if you do otherwise," or "Although most students on campus do not practice safe sex, you can be more responsible than this." At first, this advice does not seem sound in contexts favoring a positive frame. The positive-frame condition requires the communicator to make a public declaration announcing that the target population is typically not choosing the socially desired response. Presenting this information to a previously uninformed public may then create the perception that there is a shared acceptance of the undesired alternative, which may further increase the behavior's prevalence (Gibbons, Helweg-Larsen, & Gerrard, 1995; VandenEijnden, 1998; VandenEijnden, Buunk, & Siero, 1998).

Although increasing awareness of socially undesirable norms entails some risk, it should be noted that there was no evidence in any of the current studies that information about behavioral norms exerts main effects on behavioral decisions when this information was presented in the context of an image appeal. Instead, the effects of behavioral norms were determined entirely by the type of message frame with which it was paired. These results offer preliminary evidence that one can increase the salience of socially undesirable norms without increasing the frequency of the socially undesirable behaviors, provided that this is done in the

context of a message stressing the reasons for deviating from those norms (see also Cialdini, Kallgren, & Reno, 1991). Although there will certainly be contexts in which this strategy will backfire, we suggest that one need not assume that this will always be the case.

## NOTES

1. Rothman and Salovey (1997) discuss two ways of creating a gain frame (attaining a positive outcome and not attaining an undesirable outcome) and two ways of creating a loss frame (attaining a negative outcome and not attaining a desirable outcome). In our manipulation, a positive frame includes both types of gain frames (i.e., attaining a positive identity and not attaining a negative identity) and the negative frame includes both types of loss frames (i.e., attaining a negative identity and not attaining a negative identity).

2. There is an additional benefit of negative message frames. A great deal of evidence suggests that negative information tends to be given greater weight in social judgments than positive information (e.g., Kahneman & Tversky, 1979; Skowronski & Carlston, 1987; Taylor, 1991). For this reason, Blanton et al. (2001) argued that negative images will typically be given more weight in behavioral decisions than will positive images. The current studies suggest a reformulation of their analysis by showing that positive images can be more informative than negative images in cases in which positive behaviors are more distinct than their negative counterparts. Although the results in the current studies support this reformulation, it is still an open question if negative information is typically viewed as more informative, controlling for distinctiveness. There is good reason to believe that negative and distinct images will trump positive and distinct images in social perceptions—and thus be given more weight in behavioral decisions. In fact, all studies reported in this article suggest a slightly larger relationship between negative frames and perceived norms than positive frames and perceived norms. For this reason, a good strategy in image appeals may be to try, whenever possible, to find the low-prevalence behavioral alternatives that can be framed negatively instead of the high-prevalence alternatives that can be framed positively.

## REFERENCES

- Blanton, H., Gibbons, F. X., Gerrard, M., Conger, K. J., & Smith, G. E. (1997). The role of family and peers on the development of health-risk prototypes associated with substance use. *Journal of Family Psychology, 11*(3), 1-18.
- Blanton, H., & Sanchez-Burks, J. (2000). Unpublished data.
- Blanton, H., VandenEijnden, R.J.J.M., Buunk, B. P., Gibbons, F. X., Gerrard, M., & Bakker, A. (2001). Accentuate the negative: Social images in the prediction and promotion of condom use. *Journal of Applied Social Psychology, 31*(2), 274-295.
- Brehm, S. S., & Brehm, J. W. (1981). *Psychological reactance: A theory of freedom and control*. San Diego, CA: Academic Press.
- Chassin, L., Presson, C., Sherman, S. J., Corty, E., & Olshavsky, R. W. (1981). Self-images and cigarette smoking in adolescence. *Personality and Social Psychology Bulletin, 7*, 670-676.
- Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 24, pp. 201-234). Orlando, FL: Academic Press.
- Ditto, P. H., & Griffin, J. (1993). The value of uniqueness: Self-evaluation and the prevalence of valenced characteristics. *Journal of Social Behavior and Personality, 8*(2), 221-240.
- Ditto, P. H., & Jemmott, J. B. III (1989). From rarity to evaluative extremity: Effects of prevalence information on evaluations of positive and negative characteristics. *Journal of Personality and Social Psychology, 57*, 16-26.
- Frieze, I., & Weiner, B. (1971). Cue utilization and attributional judgments for success and failure. *Journal of Personality, 39*, 591-605.
- Gibbons, F. X., & Gerrard, M. (1995). Predicting young adults' health-risk behavior. *Journal of Personality and Social Psychology, 63*, 505-517.
- Gibbons, F. X., & Gerrard, M. (1997). Health images and their effects on health behavior. In B. P. Buunk & F. X. Gibbons (Eds.), *Health, coping, and social comparison* (pp. 63-94). Hillsdale, NJ: Lawrence Erlbaum.
- Gibbons, F. X., Gerrard, M., & Boney-McCoy, S. (1995). Prototype perception predicts (lack of) pregnancy prevention. *Personality and Social Psychology Bulletin, 21*, 85-93.
- Gibbons, F. X., Helweg-Larsen, M., & Gerrard, M. (1995). Prevalence estimates and adolescent risk behavior: Cross-cultural differences in social influence. *Journal of Applied Psychology, 80*(1), 107-121.
- Hilton, D. J., & Slugoski, B. R. (1986). Knowledge-based causal attribution: The abnormal conditions focus model. *Psychological Review, 93*, 75-88.
- Jemmott, J. B. III, Ditto, P. H., & Croyle, R. T. (1986). Judging health status: Effects of perceived prevalence and personal relevance. *Journal of Personality and Social Psychology, 50*, 899-905.
- Jones, E. E., & Davis, K. E. (1965). From acts to dispositions: The attribution process in person perception. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 220-266). New York: Academic Press.
- Jones, E. E., Davis, K. E., & Gergen, K. J. (1961). Role playing variations and their informational value for person perception. *Journal of Abnormal and Social Psychology, 63*, 302-310.
- Jones, E., & McGillis, D. (1976). Correspondent inferences and the attribution cube: A comparative reappraisal. In J. Harvey, W. Ickes, & R. Kidd (Eds.), *New directions in attribution research* (pp. 192-238). New York: Lawrence Erlbaum.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*, 263-291.
- Kelley, H. H. (1972). Attribution in social interaction. In E. E. Jones et al. (Eds.), *Attribution: Perceiving the causes of behavior*. Morristown, NJ: General Learning Press.
- Kelling, R. P. (2000). Social norms research in college health. *Journal of American College Health, 49*(2), 53-56.
- Lay, C., Burron, B., & Jackson, D. (1973). Base rate and information value in impression formation. *Journal of Personality and Social Psychology, 28*, 390-395.
- Leventhal, H., & Cleary, P. D. (1980). The smoking problem: A review of the research and theory in behavioral risk modification. *Psychological Bulletin, 88*(2), 370-405.
- Marks, G. (1984). Thinking one's abilities are unique and one's opinions are common. *Personality and Social Psychology Bulletin, 10*(2), 203-208.
- McGuire, W. J., & McGuire, C. V. (1980). Salience of handedness in spontaneous self-concept. *Perceptual and Motor Skills, 50*(1), 3-7.
- McGuire, W. J., McGuire, C. V., Child, P., & Fujioka, T. (1978). Salience of ethnicity in the spontaneous self-concept as a function of one's ethnic distinctiveness in the social environment. *Journal of Personality and Social Psychology, 36*, 511-520.
- McGuire, W. J., & Padawer-Singer, A. (1976). Trait salience in the spontaneous self-concept. *Journal of Personality and Social Psychology, 33*, 743-754.
- Miller, D. T., & Prentice, D. A. (1997). The construction of social norms and standards. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 299-829). New York: Guilford.
- Miller, D. T., Turnbull, W., & McFarland, C. (1988). Particularistic and universalistic evaluation in the social comparison process. *Journal of Personality and Social Psychology, 55*, 908-917.
- Mullen, B., & Goethals, G. R. (1990). Social projection, actual consensus and valence. *British Journal of Social Psychology, 29*(3), 279-282.
- Nelson, L. J., & Klutas, K. (2000). The distinctiveness effect in social interaction: Creation of a self-fulfilling prophecy. *Personality and Social Psychology Bulletin, 26*(1), 126-135.
- Nelson, L. J., & Miller, D. T. (1995). The distinctiveness effect in social categorization: You are what makes you unusual. *Psychological Science, 6*(4), 246-249.

- Niedenthal, P. M., Cantor, N., & Kihlstrom, J. F. (1985). Prototype matching: A strategy for social decision making. *Journal of Personality and Social Psychology, 48*, 282-297.
- Niedenthal, P. M., & Mordkoff, J. T. (1991). Prototype distancing: A strategy for choosing among threatening situations. *Personality and Social Psychology Bulletin, 17*, 483-493.
- Petty, R. E., Cacioppo, J. T., & Goldman, R. (1984). Personal involvement as a determinant of argument-based persuasion. *Journal of Personality and Social Psychology, 41*, 847-855.
- Reeder, G. D., & Brewer, M. B. (1979). A schematic model of dispositional attribution in interpersonal perception. *Psychological Review, 86*(1), 61-79.
- Rothman, A. J., & Salovey, P. (1997). Shaping perceptions to motivate healthy behavior: The role of message framing. *Psychological Bulletin, 121*(1), 3-19.
- Salovey, P., Rothman, A. J., & Rodin, J. (1998). Social psychology and health behavior. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., Vol. 2, pp. 633-683). New York: McGraw-Hill.
- Sherman, S. J., Presson, L. C., & Chassin, L. (1984). Mechanisms underlying the false consensus effect: The special role of threats to self. *Personality and Social Psychology Bulletin, 10*, 127-138.
- Skowronski, J. J., & Carlston, D. E. (1987). Social judgment and social memory: The role of cue diagnosticity in negativity, positive, and extremity biases. *Journal of Personality and Social Psychology, 52*, 689-699.
- Swann, W. B., Griffin, J. J., Predmore, S. C., & Gaines, B. (1987). The cognitive-affective crossfire: When self-consistency confronts self-enhancement. *Journal of Personality and Social Psychology, 52*, 881-889.
- Taylor, S. E. (1991). Asymmetrical effects of positive and negative events: The mobilization-minimization hypothesis. *Psychological Bulletin, 110*, 67-85.
- VandenEijnden, R.J.J.M. (1998). *The impact of prevalence information regarding safe sex*. Dissertation presented to Groningen University.
- VandenEijnden, R.J.J.M., Buunk, B. P., & Siero, F. W. (1998). *The "double-edged sword" of providing prevalence information regarding safe sex*. Manuscript submitted for publication.

Received January 28, 2000

Revision accepted June 15, 2000