

Understanding the Self-Prophecy Phenomenon

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ABSTRACT

The *self-prophecy effect* suggests that asking people to predict whether or not they will perform a target action leads to increased probability of performing that action, often in a socially normative direction. In two experiments, competing theories of cognitive dissonance and social identity activation were explored. Experiment 1 revealed that, following an experimentally manipulated prediction request, subjects' self-identity with a target behavior (recycling) and self-esteem increased relative to a control group. In Experiment 2, self-esteem was manipulated, followed by a prediction request. Results suggested that self-prophecy effects may be the result of the activation of normative social identities.

INTRODUCTION

When considering social influence strategies, self-prophecy is a simple technique in which merely asking someone to predict future behavior—typically regarding a socially normative action—increases the likelihood of performing the behavior. Sherman (Sherman 1980) demonstrated this phenomenon by increasing people's willingness to donate time to a charity, decreasing willingness to sing to someone on the phone, and reducing the likelihood of writing a counterattitudinal essay. Since Sherman's initial work, self-prophecy has been demonstrated for wide-ranging behaviors such as increasing voting (Greenwald, Bellezza, and Banaji 1988; Greenwald et al. 1987), reducing cheating (Spangenberg and Obermiller 1996), increasing attendance at a health club (Spangenberg 1997; Spangenberg et al. 2003), increasing recycling of aluminum cans (Sprott, Spangenberg, and Perkins 1999), reducing implicit gender stereotyping (Spangenberg and Greenwald 1999), choosing healthy snack options (Sprott, Spangenberg, and Fisher 2003), and committing to a health assessment (Sprott et al. 2004).

Prior self-prophecy research has shown that when the target behavior is socially desirable (e.g., recycling), the behavior change is upward; when the behavior is normatively undesirable (e.g., cheating, stereotyping), it is downward. Further, Sprott et al. (2003) demonstrated that the magnitude of a self-prophecy effect is moderated by the normative beliefs held toward a particular behavior. Although research has made apparent the nature of the self-prophecy effect, the theoretical underpinnings of self-prophecy are still unclear. Spangenberg and Greenwald (1999) suggest that cognitive dissonance is the most promising theoretical explanation for self-prophecy, with Spangenberg et al. (2003) providing the first theory test in support of a dissonance-based explanation. The current work seeks to develop and empirically verify the theoretical underpinnings of the self-prophecy effect.

COGNITIVE DISSONANCE AND SELF-PROPHECY

Cognitive dissonance is fundamentally motivational in nature, with an inconsistency among a person's cognitions generating dissonance, which motivates the person to alleviate this dissonant psychological condition (Elliot and Devine 1994; Festinger 1957). The leading account driving the self-prophecy effect is Festinger's (1957) cognitive dissonance (Spangenberg and Greenwald 1999;

Spangenberg et al. 2003). In particular, the self-concept formulation of cognitive dissonance (Aronson and Carlsmith 1962) offers the most promising underlying explanation for dissonance evoked in self-prophecy. This view retains the initial idea of internal inconsistency as posed by Festinger, but focuses the scope to the inconsistency between the self-concept and behavior in that dissonance is created only if it pertains to one's self-concept (Aronson 1968; Thibodeau and Aronson 1992). Holding this view, dissonance is a higher-level inconsistency between one's belief that s/he is a good and moral person and behavior that contradicts that belief, rather than a lower-level inconsistency between one's attitude and cognition about inconsistent behavior. The extent to which behavior is inconsistent with the self-concept predicts dissonance arousal.

A cognitive dissonance explanation for self-prophecy posits that when people are confronted with a prediction request, psychological discomfort arises due to people being made aware of a discrepancy between values they hold (e.g., normative beliefs about a behavior; including the belief that they are a good person and good people should perform the behavior) and how they have behaved in the past with regard to the behavior. Consider the socially positive behavior of recycling: Despite the level of previous behavior, when making a prediction request concerning recycling, an individual is reminded that he or she should recycle but neglects to recycle, or should recycle all the time but does so only occasionally. Discrepancy between these two cognitions causes cognitive dissonance, which may lead to action or behavior change (dissonance reduction) inline with the prediction request. Besides a change in behavior (e.g., increases in recycling) a person may undergo changes in psychological states. For example, after being reminded that recycling is a good (socially normative) behavior and realizing that s/he does not recycle, a person may alleviate dissonance by (1) decreasing their attitude toward recycling or (2) experiencing a degradation of self-esteem. In either case, action toward the focal task (recycling) is not present and a person maintains a cognitive balance through changes in their view of either recycling or self (Greenwald et al. 2002).

The findings of extant self-prophecy research suggest that a number of components important to dissonance are present at the time of a prediction request. First, in a typical self-prophecy intervention, control group subjects behave in a manner less socially desirable than those subjects completing a prediction request. In other words, in the absence of a prediction request, subjects behave at a level that is inconsistent with the normative belief. Second, a behavioral self-prediction likely reminds people of their behavioral transgressions regarding a social norm. Third, prior research indicates that people make a self-prediction in the direction of the social norm, which indicates an understanding of the norms associated with particular activities (Spangenberg and Greenwald 1999).

Spangenberg and Greenwald (1999) note that the self-prophecy paradigm parallels the dissonance-based research of induced-hypocrisy (Aronson, Fried, and Stone 1991; Fried and Aronson 1995; Stone et al. 1994). In this stream of research, hypocrisy is induced when subjects advocate a position beneficial to others through proattitudinal speeches or writing. This advocating is

followed by reminding the subjects of their past failure to act in a manner consistent with the advocacy. The juxtaposition of the advocacy and awareness of failure to perform the behavior arouses dissonance. Similarly, a self-prophecy prediction request reminds people of how they should behave and that they have not behaved in that manner. This results in dissonance which can be alleviated via a change in behavior (Spangenberg et al. 2003).

In summary, a self-prophecy prediction request makes people aware of a discrepancy between their actual and normatively ideal states regarding a focal behavior. This discrepancy produces a dissonant state that can be alleviated through subsequent action consistent with social norms (Spangenberg and Greenwald 1999; Spangenberg et al. 2003).

NORMATIVE SOCIAL IDENTITY ACTIVATION AND SELF-PROPHECY

In addition to a cognitive dissonance explanation for self-prophecy, there is empirical evidence suggesting the importance of social norms. Sprott, Spangenberg, and Fisher (2003) demonstrate that the effect of a self-prediction is greater when people hold stronger (versus weaker) social norms regarding a particular behavior. Although this finding can be considered consistent with a dissonance-based explanation for self-prophecy (i.e., greater cognitive dissonance is elicited for those with stronger social norms), it also suggests the importance of how closely one identifies with a social norm.

Social identities are self-definitions that incorporate more general and normative knowledge about a particular group that an individual belongs to or identifies with (Brewer 1991). An individual's social identity has been found to influence a wide variety of consumer behaviors and attitudes (Briley and Wyer 2002; Deshpande, Hoyer, and Donthu 1986; Stayman and Deshpande 1989; Wooten 1995), spokesperson response (Deshpande and Stayman 1994), advertising response (Forehand and Deshpande 2001; Forehand, Deshpande, and Reed II 2002), media usage (Saegert, Hoover, and Hilger 1985), and information processing tendencies (Meyers-Levy and Sternthal 1991). Social identities can be especially influential when that identity is made socially or environmentally salient (Briley and Wyer 2002; Forehand and Deshpande 2001; Forehand et al. 2002; Reed II 2004). Social identities are shaped by a lifetime of experience, social interaction, and self-expression (Belk 1988; Escalas and Bettman 2003, 2005; Fournier 1998; Richins 1994). Social identities are thought to incorporate behavioral and attitudinal information as well (Brewer and Gardner 1996), such that activating a social identity affects the individual's own self-esteem (Crocker et al. 1994). Thus, when a positive social identity is activated, it is expected that the individual's own self-esteem should be affected in a positive direction as well. Further, to the extent that individuals use these social identities as indicators of behavior, it is expected that individual should attempt to behave in a way consistent with the activated social identity.

THEORETICAL PREDICTIONS

How might a cognitive dissonance explanation and a normative social identity activation explanation be delineated? When making a prediction, one must first activate information related to the behavior. Because the self-prophecy effect works with normative behavior, the definition of normative behavior suggests that most individuals should have that information associated with the self to some extent. Attitudes toward a behavior (e.g., recycling) should be relatively positive regardless of whether or not a self-prophecy prediction is made. This is because the behavior is both positive and normative. When one thinks about recycling, even if

one is not making a prediction about performing the behavior, it should be expected that a positive attitude toward recycling would be present. Thus, cognitive dissonance and normative self-identity activation should predict a positive attitude toward recycling following the prediction, as well as the activation of information about the target normative behavior as it relates to that individual's self and social identities.

Where the two explanations differ is in their treatment of self-esteem. If self-prophecy is a dissonance-based effect, lower relative self-esteem should be observed for those who make a prediction regarding the normative behavior compared to a control group that does not make a prediction request. This drop in self-esteem is a result of the inconsistency in memory related to the positivity of the normative behavior (e.g., "I know that recycling is positive and I know that I have not recycled."). On the other hand, if self-prophecy is the result of social identity activation, the opposite effect is expected related to self-esteem. If it is the case that making the self-prediction toward the normative behavior activates the "recycling" social identity, then one's self-esteem should increase, as the recycling social identity is positive in nature. The link between social identity and self-esteem is well-researched in social psychology (Brewer and Gardner 1996; Brown 1998; Crocker et al. 1994; Greenwald et al. 2002; Greenwald et al. 1988). As such, to the extent that a particular self- or social identity is activated, the valence incorporated into that identity should be activated as well. Therefore, self-esteem should increase for those who make a self-prophecy prediction compared to those who do not make a prediction.

EXPERIMENT 1

Experiment 1 tests the hypothesis that making a self-prophecy prediction activates self-recycling identity in memory. To the extent that this self-recycling identity is activated, the positive affect associated with the normative behavior (recycling) should then lead to an increase in self-esteem. From a methodological standpoint, Experiment 1 was designed to ascertain whether the Implicit Association Test (Greenwald, McGhee, and Schwartz 1998) is an appropriate measure to capture these changes in cognitive activation. If activation of self-identity information is the impetus for behaving consistently with the normative behavior, then it is expected that self-relevant knowledge will be observed via the IAT.

Sample and Procedure Overview. The sample included seventy-six students from an introductory marketing course at a large west coast university participating for course credit. Subjects completed a set of self-report measures assessing their attitudes toward various normative behaviors. A distraction task followed completion of the questionnaire. Following the distraction task, subjects completed the self-prophecy manipulation task, then immediately completed three IATs: recycling identity, recycling attitude, and self-esteem. Following completion of the IATs, subjects were debriefed and released.

Explicit Measures. Subjects completed a battery of self-report measures designed to ascertain the extent to which subjects had a positive attitude toward various normative behaviors, including the target behavior of recycling. Following instructions that there were no right or wrong answers, and that the responses would be anonymous, subjects completed five six-item scales that measured attitudes toward six different target items, one of which was the target behavior (recycling). Different versions of these measures were counterbalanced to avoid order effects.

Experimental Manipulation. Following completion of the explicit measures and a distraction task designed to eliminate any

carry-over from completing the explicit measures, subjects completed another self-report questionnaire which included the prediction request. Following instructions that there were no right or wrong answers, and that responses were to be anonymous, subjects recorded a dichotomous response to each of four different scenarios, including a recycling scenario. The specific format of the recycling question was as follows:

“You frequently purchase and use products that come in recyclable packages (e.g., cardboard boxes, aluminum cans).

Do you predict that

- a. you will recycle these materials?
- b. you will not recycle these materials?”

The control condition differed in procedure such that those subjects did not answer a prediction question related to recycling. Following the manipulation, subjects were then moved to a computer lab in order to complete the IAT.

IAT Procedure. Subjects completed three IATs at PC-based workstations. The IATs were presented in a counterbalanced format, and included a measure of recycling attitude, recycling self-identity, and self-esteem (Farnham, Greenwald, and Banaji 1999). The attitude, self-identity and self-esteem forms of the IAT have been used extensively in prior research.

Results

Implicit Self-Identity. It was hypothesized that subjects who make a self-prophecy prediction about recycling behavior should activate a social identity representing recycling in memory. The activation of that social identity should be revealed in a stronger self-recycling IAT effect compared to a control group. Consistent with this hypothesis, subjects who made a self-prophecy prediction revealed a significantly stronger self-recycling activation compared to a control group ($D_{\text{control}}=.23, D_{\text{treatment}}=.40; t(73)=2.33, p=.02$).

Recycling Attitude. It was hypothesized that both the treatment and control conditions should have equivalent positive attitudes toward recycling. Recycling is a normative behavior and is generally thought to be positive (DeYoung 1990; Schultz 1998). Thus, most individuals should have a positive attitude toward recycling. Consistent with this hypothesis, subjects who made a self-prophecy prediction were no different in implicitly measured recycling attitude than the control group ($D_{\text{control}}=1.0, D_{\text{treatment}}=1.1; t(76)=.70, p=.49$).

Implicit Self-Esteem. To the extent that a positive social identity is activated in memory, an associated boost in self-esteem was expected. Because individuals tend to reveal overall positive self-esteem (Brown, 1998), positive overall self-esteem in both the treatment and control groups was expected, but greater self-esteem in the treatment condition was expected. Consistent with this hypothesis, subjects who made a self-prophecy prediction revealed significantly stronger self-esteem compared to a control group ($D_{\text{control}}=.59, D_{\text{treatment}}=.74; t(74)=2.14, p=.03$).

Discussion

Experiment 1 provides evidence for the hypothesis that making a self-prophecy prediction activates the relevant social identity in memory. In the current research, it is suggested that making a self-prophecy prediction activates self-knowledge relevant to recycling behavior. By activating a positive social identity (which includes the individual's self as a member of that social group), it is expected that self-esteem should increase, since the individual is temporarily in a positive self-state.

These results also provide evidence of the inter-relatedness of self-esteem, self- and social identity, and attitudes in memory. Greenwald et al. (2002) suggest that there is a relationship between implicit attitudes, self-esteem, and self-identity. Specifically, Greenwald and colleagues posit that there is a connection between three concepts in memory: (1) self (individually or within the context of a social group), (2) a social object (e.g., recycling), and (3) an attribute (e.g., good or bad). Each of these concepts forms a vertex in a triadic relationship. Similar to *Balance Theory* (Heider 1958), Greenwald and colleagues suggest that people maintain balance among the relationships between the concepts at each vertex. The social object-self association corresponds to one's identity, the social object-attribute association corresponds to one's attitude, and the self-attribute association corresponds to one's self-esteem. Specific to these results, when a particular self-identity is activated (in this case, the recycling self-identity), the positivity associated with that normative self-identity is reflected in the increase of that individual's self-esteem.

Further, the lack of significant differences in recycling attitude between the conditions suggests that attitude accessibility is not a compelling explanation for self-prophecy effects. While not the focus of this research, previous findings in a related stream of research—mere-measurement—have suggested attitude accessibility as a possible explanation (Morwitz, Johnson, and Schmittlein 1993). To the extent that making a prediction activates information related to the target behavior in memory, the ease of the accessibility of that previously activated information acts as a cue for behavior toward the target behavior. However, these results suggest that there is no difference between the level of activation of attitude information between the treatment and control, suggesting that both groups have equal accessibility to that information following a prediction.

Finally, while prior research has used implicit self-identity measures as independent variables to predict some normative behaviors, such as smoking (Swanson, Rudman, and Greenwald 2001), this is the first time a self-identity IAT has been used as a manipulated variable to assess the affects of an experimental treatment. To the extent that the IAT reflects individual-level changes in specific relational states, and those relational states are representative of theoretical models of social behavior, the IAT becomes a powerful tool to assess the links amongst social and self-associated objects in memory.

EXPERIMENT 2

While experiment 1 provides some evidence supporting a self-identity activation explanation for the self-prophecy effect, further evidence of the effect of social identity activation on self-esteem was warranted. Specifically, it was decided to manipulate self-esteem. Manipulating self-esteem prior to making the self-prophecy prediction was thought to be the strongest test possible of the predicted differences between a social identity and a cognitive dissonance explanation of the self-prophecy effect. Specifically, following a reduction of self-esteem, if a cognitive dissonance explanation for self-prophecy is correct, there should be no recovery of self-esteem following prediction, for the simple reason that making the self-prophecy prediction under the cognitive dissonance explanation should in itself reduce self-esteem. On the other hand, following artificial reduction of self-esteem, the social identity activation explanation of the self-prophecy effect suggests that making the prediction should activate the related normative social identity (e.g., recycling) as well as the associated positive valence associated with that identity, thus allowing self-esteem to recover.

Sample and Procedure Overview. One hundred eighty-two students from an introductory marketing course at a large west coast

university participated in a 2 (self-esteem manipulation: easy/difficult) x 2 (self-prophecy prediction: yes/no) experiment for course credit. Experiment 2 was identical to experiment 1 with the exception of the inclusion of a manipulation designed to temporarily decrease self-esteem. After a brief introduction the experimental session began with a self-esteem manipulation (the Remote Associates Test [RAT], described below). After completion of the RAT, subjects answered follow-up measures relating to their perceived performance on the exercise (see Appendix 3). These measures served to indicate whether the RAT had the intended effect. Subjects then either did or did not make the same self-prophecy prediction described in experiment 1. Following the self-prophecy manipulation, subjects completed the same set of IATs described above. At the conclusion of the IATs, subjects were debriefed and excused.

Experimental Manipulation. The RAT was employed to manipulate self-esteem (McFarlin and Blascovich 1984). The RAT was preferred over other self-esteem manipulations because the RAT does not require any deception on the part of the experimenter. Subjects were instructed that they would be completing a word generation task in which they would be given three related words. The task required the subject to provide an additional fourth word chosen to logically complete the word set. Two conditions (easy/difficult) of the RAT were used that varied in the difficulty of the required fourth word. Subjects were given 10 minutes to complete the RAT exercise. After time had elapsed, subjects were asked to stop with the task regardless of how many answers they had generated, and were informed they would be correcting their own answers. The experimenter indicated the correct responses to the subjects, while the subjects corrected their own paper and clearly marked the incorrect or non-response answers. The subjects then listed the number of correct responses they had generated at the top of the paper. Both the act of answering the questions as well as the public correcting and recording of the score induce an increase or decrease in self-esteem consistent with the difficulty condition, such that those in the *difficult* condition should reveal a decrease in self-esteem, while those in the *easy* condition should reveal boosted self-esteem.

Self-Prophecy Manipulation. The self-prophecy manipulation was identical to experiment 1. All subjects responded to a short questionnaire that required them to make predictions about a number of common behaviors, where half the subjects responded to a question specific to recycling behavior.

IAT Procedure. The IAT procedure was identical to experiment 1.

Results

Manipulation Checks. Subjects reported the extent to which they enjoyed the self-esteem manipulation tasks, and how well they felt they did on those tasks. Those in the difficult condition perceived that they did significantly worse than those in the easy condition when indicating the number of word sequence tasks they thought they completed correctly ($M_{\text{difficult}}=1.87$, $M_{\text{easy}}=3.89$; $p<.000$). Additionally, subjects in the difficult condition reported the task to be significantly less fun than those in the easy condition ($M_{\text{difficult}}=3.25$, $M_{\text{easy}}=4.79$; $p<.000$). These performance tasks are shown in appendix C. It should be noted that subjects' self-esteem was not probed prior to the manipulation and IATs in order to minimize the chance of priming the self-concept or self-esteem.

Implicit Self-Identity. Prior to analysis, subjects in the *difficult* condition who scored higher than the midpoint on the "fun" scale were removed from the analysis. It was thought that these individuals might receive self-related boosts from performing a task that

was intellectually stimulating or interesting. This resulted in the removal of sixteen subjects. Similar to experiment 1, subjects who made a self-prophecy prediction about recycling behavior should activate a social identity representing recycling in memory. The activation of that social identity should be revealed in a stronger self-recycling IAT effect compared to the no-prediction group. Consistent with experiment 1, subjects who made a self-prophecy prediction revealed significantly stronger recycling self-identity compared to those who did not ($D_{\text{no-prediction}}=.30$, $D_{\text{prediction}}=.41$; $F=4.1$, $p<.05$). Further, neither the main effect of the self-esteem manipulation nor the interaction was significant.

Recycling Attitude. Similar to experiment 1, because recycling is a normative behavior and is generally thought to be positive (DeYoung 1990; Schultz 1998), most individuals should have a positive attitude toward recycling. Consistent with this hypothesis, subjects who made a self-prophecy prediction were no different in implicitly measured recycling attitude than the control group ($D_{\text{no-prediction}}=.93$, $D_{\text{prediction}}=1.03$; $F=1.35$, $p=.25$). Further, neither the main effect of the self-esteem manipulation nor the interaction was significant.

Implicit Self-Esteem. It was expected that, consistent with a social identity activation explanation for the self-prophecy effect, making a prediction about a normative behavior (in this case, recycling) should facilitate the recovery of self-esteem following self-esteem threat. Thus a two-way interaction was expected between the difficulty of the task and whether the subject made a self-prophecy prediction. Consistent with this expectation, a marginal two-way interaction obtained ($F(1, 166)=2.88$, $p=.10$).

Discussion

The results of experiment 2 suggest that making a self-prophecy prediction can alleviate the effects of prior self-esteem threat to an individual. This is consistent with the social identity explanation for self-prophecy effects, in that a social identity explanation would posit an increase in self-esteem following the activation of a positive social identity following a self-prophecy prediction. On the other hand, if making a self-prophecy prediction induces cognitive dissonance, one would expect that self-esteem would remain low following manipulation.

It was also promising that all of the effects found in experiment 1 were replicated. Consistent with experiment 1, there was no difference in implicitly measured attitudes toward recycling between the conditions. Again this suggests a lack of support for attitude accessibility explanations for the self-prophecy effect, since the results suggest that attitude toward recycling was equivalent across conditions. Further, experiment 2 revealed the expected main effect of social identity on the prediction. This again suggests that recycling social identity is activated following the self-prophecy manipulation. Further, the lack of a significant interaction on the self-recycling IAT suggests that the self-esteem manipulation is not affecting the activation of recycling social identity.

GENERAL DISCUSSION

The results of experiment 1 suggest that completing a self-prophecy prediction request activates related social identity in memory, such that self-knowledge is activated relevant to recycling behavior. The results of experiment 2 suggest that completing a self-prophecy prediction request alleviates the effects of prior self-esteem threat to an individual. These results are more consistent with a social identity explanation for self-prophecy rather than a cognitive dissonance explanation. If making a self-prophecy prediction induces cognitive dissonance, it would be expected that self-esteem would remain low after a self-esteem manipulation.

Using a social identity explanation, the current studies found an increase in self-esteem following the activation of a positive social identity following a self-prophecy prediction request.

These results provide evidence of the inter-relatedness of self-esteem, self-identity, and attitudes in memory (Greenwald et al. 2002). Greenwald and colleagues (2002) posit that there is a connection between the self, a social object (e.g., recycling), and an attribute (e.g., good or bad). As was the case with the current research, when a particular social identity is activated (e.g., recycling), the positivity associated with that normative social identity is reflected in the increase of an individual's self-esteem.

Finally, and while not the focus of this research, the lack of significant differences in recycling attitude between conditions suggests that attitude accessibility is not a compelling explanation for self-prophecy. To the extent that making a prediction activates information related to the target behavior in memory, the ease of the accessibility of that previously activated information acts as a cue for behavior toward the target behavior. However, this research suggests that there is no difference between the level of activation of attitude information between treatment and control conditions, suggesting that both groups have equal accessibility to that information following a prediction request.

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