

Lay theories of self-control influence judgments of individuals who have failed at self-control

Nicholas Freeman¹, Dikla Shmueli², Mark Muraven³

¹University of North Carolina at Pembroke

²The EMMES Corporation

³University at Albany, State University of New York

Correspondence concerning this article should be addressed to Nicholas Freeman, University of North Carolina at Pembroke, PO Box 1510, Pembroke, NC 28372, USA.
E-mail: nicholas.freeman@uncp.edu

doi: 10.1111/jasp.12098

Abstract

Individuals who have failed at self-control are often the targets of negative social judgments. We suggest that in some circumstances, individual differences in lay theories regarding self-control may help account for these reactions. Specifically, people may believe that the ability to exert self-control is either a fixed quantity (entity theory) or a malleable quantity (incremental theory), and these beliefs may influence their social judgments. In the current investigation, we found that whether lay theories of self-control were measured or manipulated, entity views of self-control predicted more negative judgments about a target whose self-control failure was made salient.

What do people think about obese people or smokers who are unable to lose weight or quit smoking? Are they at fault for their condition? Can they ever change their behavior? People's beliefs about the nature of self-control may influence how they judge others. To date, little research has focused on how beliefs about self-control influence perceptions of individuals who fail at self-control. To address this gap, the present investigation applied research on lay theories (Dweck & Leggett, 1988) to test whether an individual's lay theory about the nature of self-control influences how they judge a target who has failed at exerting self-control. We suggest that people who believe self-control is fixed and unchanging may use information about a target's past self-control behavior to predict their future self-control behavior, and, may make more negative personality judgments of people who appear to have failed at self-control as a result of a reliance on negative stereotypes. In addition to exploring how lay theories of self-control influence person perception, the results may have implications for understanding and predicting bias directed at individuals who fail at self-control.

There is good evidence to suggest that in Western society, both an inability to lose weight and an inability to quit smoking are often regarded by others as failures of discipline or self-control. For example, people may feel that obese individuals have weak willpower, whereas a slim figure reflects control and the ability to transcend immediate desires of the flesh (Quinn & Crocker, 1999). Furthermore, these percep-

tions are not limited to the general public, but include professionals in the health services field. For instance, researchers have found that nurses perceived patient noncompliance as the most likely reason for obese patients' inability to lose weight (Hoppe & Ogden, 1997). Similarly, an inability to quit smoking is often associated with weakness of character or self-control. In a recent study, German medical students considered "willpower alone" more effective than comprehensive group cessation programs (Raupach et al., 2009). Research has also demonstrated that physicians identify willpower and lack of interest as primary barriers to smoking cessation, particularly physicians who do not smoke themselves (Pipe, Sorensen, & Reid, 2009). In summary, both an inability to lose weight and an inability to quit smoking are often perceived as a failure to adequately exert self-control.

A growing body of literature suggests that obese individuals and smokers deal with negative attitudes and even overt discrimination from others. Bias toward obese individuals has been demonstrated by children, the general public, and even healthcare providers specializing in obesity treatment (Brownell, Puhl, Schwartz, & Rudd, 2005; Schwartz, Chambliss, Brownell, Blair, & Billington, 2003; Teachman & Brownell, 2001). Smokers in contemporary U.S. society also face stigmatization and discrimination. There is substantial antismoking sentiment among the public, and cigarette smoking is generally regarded as a negative social label and even as a marginally deviant behavior (Kim & Shanahan,

2003; Santuzzi, 2007). Preventative smoking control efforts have depicted smoking as a filthy habit in media campaigns and antismoking slogans, such as “Kiss a non-smoker. Enjoy [or taste] the difference” and “Kissing a smoker is like licking an ashtray” (Cancer Council NSW, 2001). Thus, there is evidence to suggest that individuals who have failed to control their weight or smoking experience negative attitudes and discrimination from others as a result.

Attitudes regarding the fixedness or malleability of self-control may help account for the negative judgments faced by individuals whose behavior or appearance reflects a lack of self-control or willpower. The construct of implicit or lay theories (Dweck, Chiu, & Hong, 1995; Dweck, Hong, & Chiu, 1993; Dweck & Leggett, 1988) has been used to distinguish between those who believe that human attributes are inherently fixed or static (entity theorists) and those who believe that human attributes are malleable in nature and may develop and change incrementally based on an individual's effort (incremental theorists).

Lay theories may be particularly important determinants of how people perceive others. For instance, evidence suggests that people with an entity theory are prone to make dispositional trait inferences and predictions about future behavior from preliminary information about a target (Chiu, Hong, & Dweck, 1997). As an example, people with an entity theory of personality were more likely than people with an incremental theory to report that a target's behavior in one situation (i.e., friendliness toward an interaction partner) was predictive of how the target would act in a different situation in the future (i.e., friendly; Chiu et al., 1997, Study 1). Lay theories also predict the degree to which people make evaluative and stereotypical judgments of others (Levy, Stroessner, & Dweck, 1998). For instance, individuals holding an entity theory made more stereotypical judgments of ethnic, occupational, and even artificially created groups compared to individuals holding an incremental theory. They agreed more strongly with stereotypes presented to them (e.g., “African Americans are violent”) and were more likely to believe that the stereotypes reflected inherent group differences (Levy et al., 1998).

Given that judgments of others depend on the lay theory people hold, exploring how lay theories of self-control influence judgments about others who may have failed at self-control may have important implications for understanding and predicting the stigmas and biases that such individuals face. Whereas research has recently examined how lay theories of self-control influence one's own self-control performance (Job, Dweck, & Walton, 2010), the role that lay theories of self-control play in one's evaluation of others has yet to be examined. Because lay theories are domain specific, in Experiment 1, we adapted a scale that has been used in previous research on lay theories (e.g., Dweck et al., 1995) so as to specifically assess individuals' attitudes regarding the malle-

ability of self-control. In Experiment 2, we manipulated lay theories of self-control by having participants read one of two bogus research summaries.

Once lay theories about self-control were measured (Experiment 1) or manipulated (Experiment 2), participants were asked to make a series of judgments about either an obese individual (Experiments 1 and 2) or a smoker (Experiment 1). In some conditions, we explicitly drew attention to a self-control failure. That is, in some conditions, the target was described as having tried and failed in their attempt to lose weight or quit smoking. This was designed to make the self-control failure particularly salient and to expressly associate self-control with the described behaviors. This explicit remark also served to circumvent reliance on the assumption that obese individuals and smokers wish to change their behaviors and that their obesity or smoking reflect self-control failure in the first place. Indeed, research conducted on a sample of overweight and obese females found that over 50% of the sample reported being satisfied with their weight (Anderson, Eyster, Galuska, Brown, & Brownson, 2002). A recent poll of smokers found that more than 20% had no desire to quit smoking (Jones, 2006). From a self-control perspective, an obese person who does not wish to lose weight and a smoker who does not want to quit smoking may not be valid representations of self-control failure.

Based on previous work suggesting that people with an entity theory are prone to making dispositional trait inferences based on behavioral information (Chiu et al., 1997), we predicted that participants who more strongly endorsed an entity theory of self-control would be more likely to make negative predictions about a target's future self-control achievements, particularly when the target's self-control failure was made salient. We also predicted that in situations when self-control failure was made salient, people who more strongly endorsed an entity theory would provide negative personality ratings to a target. This may occur because people with an entity theory may be especially likely to use and apply negative stereotypes about people who have failed at self-control to a target whose behavior suggests they have low self-control (see Levy et al., 1998).

Experiment 1

In Experiment 1, we measured participants' lay theories of self-control to examine whether these beliefs reliably predicted judgments about a target who failed in a self-control domain. We chose to focus on targets who failed to lose weight or quit smoking because the inability to lose weight or quit smoking suggests a self-control failure (Baumeister, Heatherton, & Tice, 1994). Participants were first exposed to a profile about an obese target or a target who smoked. In some of the profiles, the target was explicitly described as being unable to lose weight or quit smoking. Following expo-

sure to the profile, participants rated the likelihood that the target would experience various self-control related future outcomes (i.e., maintain a normal weight) and rated her personality.

We predicted that particularly when the self-control failure was made salient, participants who more strongly endorsed an entity theory of self-control would rate the targets more harshly than participants with a more incremental view of self-control. Further, we predicted that these effects would be the same across both self-control domains; i.e., that they would be similar for both obese and smoker targets.

Method

Participants

One hundred ninety-four undergraduates (76 males, 118 females) participated in return for partial course credit. Participants were run either individually or in small groups ranging from two to five in experimental sessions lasting approximately 30 minutes. The majority (81.5%) of participants were between the ages of 18 and 20, with the rest being 21 or older. The sample was largely (68.6%) European American. 10.3% of the sample were African American, 6.7% were Asian, and 14.4% reported another ethnic category or preferred not to answer.

Procedure

Participants were informed that the experiment consisted of two parts. They were told that they would first read a profile describing a student at their college, and afterwards, would complete a questionnaire packet that contained questions about the person depicted in the profile and about themselves.

After signing an informed consent sheet, participants were presented with one of four randomly assigned profiles (two targeting obesity and two targeting smoking behavior). Each profile depicted a fictitious student named Jennifer and contained identical basic biographical and personal information (e.g., hometown, age, family, pets). In the two obesity profiles, Jennifer's weight was listed as 240 pounds and her height was listed as 5' 5", which corresponds to an obese body mass index (BMI) of 39.9. In the two smoking profiles, Jennifer was described as smoking one pack of cigarettes per day. In these profiles, her weight was listed as 140 pounds and her height was listed as 5' 5", which corresponds to a recommended BMI (23.3). The salience of the self-control failure was also manipulated. Whereas one of the obese profiles simply listed Jennifer's height and weight, the other mentioned that she "had tried to lose weight but was unsuccessful". In the smoking profiles, one of the profiles simply listed her smoking behavior whereas the other mentioned that Jennifer

had "previously attempted to quit smoking but was unsuccessful". In summary, participants read either about an obese person, an obese person who had failed at dieting, a smoker, or a smoker who had failed to quit. All other information included in the profiles was identical.

Participants were instructed to read the profile extremely carefully and to visualize interacting with the person depicted in the profile. Participants were given 5 minutes to study the profile, after which, it was taken from them by the experimenter and not returned.

Following exposure to the profile, participants were given a questionnaire packet to complete. The questionnaire packet contained questionnaires that probed participants about their perceptions and opinions regarding the person depicted in the profile (a future outcomes measure, a modified version of the Rokeach Value Survey, and a questionnaire about the target's characteristics), and about themselves (a demographics measure and the Lay Theories of Self-Control Scale [LTOSC]). Whereas questions about the target person were always asked first, the order of individual questionnaires was counterbalanced across participants.

Measures

The following measures were administered to participants:

Future outcomes

A future outcomes measure was constructed for use in the current experiment. This measure consisted of three items that asked participants how likely they thought it was that Jennifer would experience success with either reducing her smoking or reducing her weight. As an example, participants were asked how likely they thought that "Five years from now, Jennifer will be completely smoke free (maintain a healthy weight)." Participants responded to items on a 7-point Likert scale ranging from 1 (*very likely*) to 7 (*not at all likely*). The items were averaged together to form an index ($\alpha = .84$), with lower numbers indicating that the event was more likely.

Personality traits

Participants used a 28-point Likert scale to rate Jennifer on 18 different personality traits. Participants completed this scale by selecting how well a given personality trait statement described Jennifer. Sample statements included, "Jennifer is ambitious," and "Jennifer is cheerful." The personality trait statements were adopted from the instrumental values portion of the Rokeach Value Survey (Rokeach, 1973). All of the 18 personality traits on the scale were positive (e.g., honest, helpful, courageous), and responses to the scale were averaged into one index, $\alpha = .93$.

Demographics and questions about the target's characteristics

Participants completed a basic demographic questionnaire as well as a questionnaire that asked about the target's characteristics. The characteristic questionnaire included free-response items about Jennifer's gender ("What was Jennifer's gender?"), and smoking/weight habits (e.g., "What was Jennifer's weight?").

Lay theories of self-control

The LTOSC is a 5-item measure that we developed based on Dweck and colleagues' (Chiu et al., 1997) implicit person theory scale. Dweck and colleagues recommend measuring lay attitudes using domain specific scales; our current scale is similar to other scales created to measure lay attitudes about morality and health (Chiu, Dweck, Tong, & Fu, 1997; Lochbaum, Bixby, Lutz, Parsons, & Akerhielm, 2006). Five items rather than three were used in the scale in order to test whether the various terms for self-control (willpower, self-control, resisting temptation) revealed different results. A principal component analysis suggested that one factor accounted for 62.8% of the variance and that all items loaded on this factor (see Table 1). As with the original implicit person theory scale (Chiu, Hong, et al., 1997), all the statements were framed as "entity items" because previous research has shown that there is a tendency to agree with incremental items, leading to ceiling effects in experimental results. Furthermore, research has demonstrated that incremental and entity attitudes are on opposite ends of the same attitudinal continuum, so (negative) responses on entity framed items would indicate incremental tendencies (Chiu, Hong, et al., 1997).

Responses on the LTOSC were averaged together into one index that had good reliability: $\alpha = .85$. Because responses to the LTOSC were not made until after the experimental manipulations, a 2 (obesity vs. smoking) \times 2 (failure salient

vs. not salient) analysis of variance (ANOVA) was conducted to see if the manipulations influenced LTOSC responses. No main effects emerged (both $ps > .82$) and only a marginally significant interaction was found ($p < .08$). In sum, the experimental manipulations did not influence LTOSC responses in a reliable or theoretically meaningful manner.

Results

Perception of target's characteristics

Nearly all (99%) of the participants correctly recalled that the target in the personal profile was female. Furthermore, out of the 98 participants who read a profile about a smoker, 89 (91%) correctly indicated that the target person smoked one pack of cigarettes per day. In addition, in response to an open-ended question, 77 out of the 96 (80%) participants who read a profile about an obese target correctly recalled Jennifer's weight of 240 pounds. The average response to this question among participants who read about an obese target was 237.17 pounds. In short, there is ample evidence that participants were aware of Jennifer's characteristics when filling out the questionnaires.

Ratings of target

In the subsequent analyses of participant's ratings of Jennifer's future outcomes and personality, no interactions emerged across domain (e.g., smoking, obesity). As a result, self-control domain will not be discussed further.

Future outcomes

We analyzed participants' expectations for the target's future outcomes using a regression analysis in which experimental condition (self-control failure salient vs. not salient), participants' lay theory of self-control, and the interaction between these two variables were entered as predictors.¹ A marginally significant main effect emerged for failure salience, $B = 1.44$, $SE = .74$, $t(190) = 1.93$, $p < .06$. No main effect emerged for lay theory. There was however an interaction between lay theory and failure salience, $B = -.37$, $SE = .19$, $t(190) = -1.98$, $p < .05$. To clarify the nature of this interaction, we examined the correlation between participants' lay theories and their

Table 1 Factor Loadings for Items in the Lay Theories of Self-Control Scale

Item	Factor loading
1. The amount of self-control someone has is something basic about them, and it can't be changed very much.	.805
2. Everyone has a certain level of willpower, and there is not much that they can do to change that.	.804
3. Regarding self-control and willpower, you either have it or you don't.	.864
4. You can learn new ways to increase your self-control but you can't really change your basic self-control ability.	.787
5. A person's ability to resist temptation is a fixed quality.	.693

Note. $n = 194$.

¹In their research on implicit theories, Dweck and colleagues (e.g., Dweck et al., 1995) have traditionally treated lay theories as a categorical variable. Typically, individuals who score below a 3 on the scale are categorized as entity theorists, participants who score above a 4 as incremental theorists, and participants who score in the middle are treated as having no clearly defined theory and excluded from further analyses. Using these categorization criteria, 94 participants were classified as incremental theorists (48.5%), 49 as entity theorists (25.3%), and 51 participants with no clear theory (26.3%). All significant findings reported in the text were replicated when lay theory was examined as a categorical variable.

Table 2 Experiment 1: Correlations Between Lay Theories of Self-Control and Dependent Variables When the Self-Control Failure Was Made Salient and When it Was Not Made Salient

	Self-control failure salient	Self-control failure not salient
Future outcomes	-.338**	-.055
Personality	.360**	.005

Note. $n = 194$. For future outcomes, lower numbers indicate more positive future outcomes. For personality, higher numbers indicate higher levels of the variable. Lay theories of self-control were measured such that higher numbers indicate the endorsement of an incremental theory. ** $p < .01$.

ratings of Jennifer's future outcomes. This correlation was significantly negative, but only for participants in the failure salient condition (correlation coefficients depicted in Table 2). To further explore the interaction, we also compared individuals who endorsed a relatively strong incremental theory (1 *SD* above the mean response) on our (centered) measure of self-control lay theory with individuals who endorsed a relatively strong entity theory (1 *SD* below the mean response) across the different failure salience conditions (Aiken & West, 1991). When failure was not salient, lay theory was not a significant predictor of ratings of Jennifer's future outcomes, $B = -.07$, $SE = .13$, $t(93) = -.58$, *ns*. When failure was salient however, lay theory did significantly predict ratings of Jennifer's future outcomes, $B = -.44$, $SE = .14$, $t(93) = -3.16$, $p < .01$. These results are depicted in Figure 1. In summary, fixed theories of self-control predicted less optimism regarding Jennifer's future outcomes, but only when her self-control failure was made salient.

Personality

Participants' ratings of the target's personality traits were analyzed using a regression analysis in which experimental condition (self-control failure salient vs. not salient), participants' lay theory of self-control, and the interaction between these two variables were entered as predictors. A main effect emerged for failure salience, $B = -5.85$, $SE = 2.05$, $t(190) = -2.86$, $p < .01$, indicating that participants were harsher in their judgments of Jennifer's personality when her self-control failure was made salient. In addition, a marginally significant main effect emerged for lay theory, $B = -1.33$, $SE = .80$, $t(190) = -1.67$, $p < .10$. These effects were qualified by a significant interaction between the two variables, $B = 1.35$, $SE = .51$, $t(190) = 2.62$, $p < .01$. We again examined the correlation between participants' lay theories and their ratings of Jennifer's personality within each experimental condition. The correlation was significantly positive, but only for participants in the failure salient condition (correlation coefficients depicted in Table 2). To further break down the

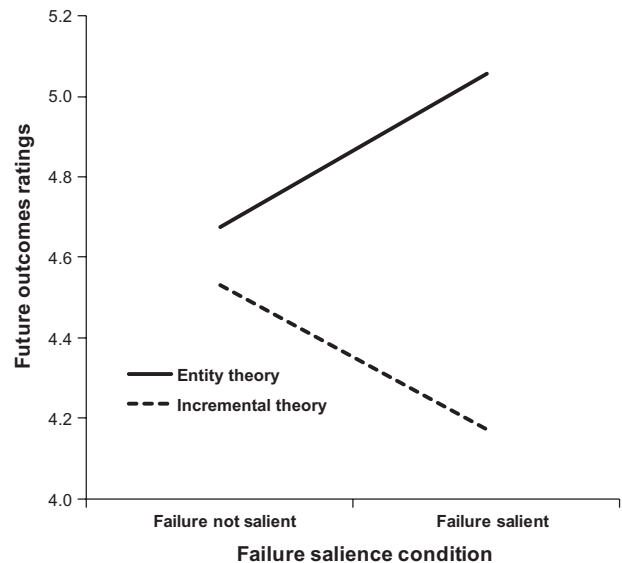


Figure 1 Interactive effects of failure salience and lay theory of self-control on ratings of the target's future outcomes. Lower numbers indicate more positive future outcomes. The line marked "entity theory" represents participants who scored 1 *SD* lower than the mean on the lay theories of self-control measure, whereas the line marked "incremental theory" represents participants who scored 1 *SD* higher than the mean on the measure.

interaction, we again compared individuals who endorsed a relatively strong incremental theory (1 *SD* above the mean) on our (centered) measure of self-control lay theory with individuals who endorsed a relatively strong entity theory (1 *SD* below the mean response) across the different failure salience conditions (Aiken & West, 1991). When failure was not salient, lay theory was not a significant predictor of ratings of Jennifer's personality, $B = .02$, $SE = .35$, $t(93) = .05$, *ns*. When failure was salient however, lay theory significantly predicted ratings of Jennifer's personality, $B = 1.36$, $SE = .37$, $t(93) = 3.65$, $p < .01$. These results are depicted in Figure 2. In summary, holding an entity theory of self-control predicted harsh judgments of Jennifer's personality, but only when her self-control failure was made salient.

Discussion

Experiment 1 provides evidence that individuals who hold entity theories of self-control are harsher in their judgments of targets who have failed at self-control. When a self-control failure was made salient, participants who more strongly endorsed an entity theory of self-control were less optimistic regarding Jennifer's future and rated her personality more negatively than did incremental theorists. The observed effects generalize across at least two domains of self-regulatory failure: smoking and obesity. In no instance were

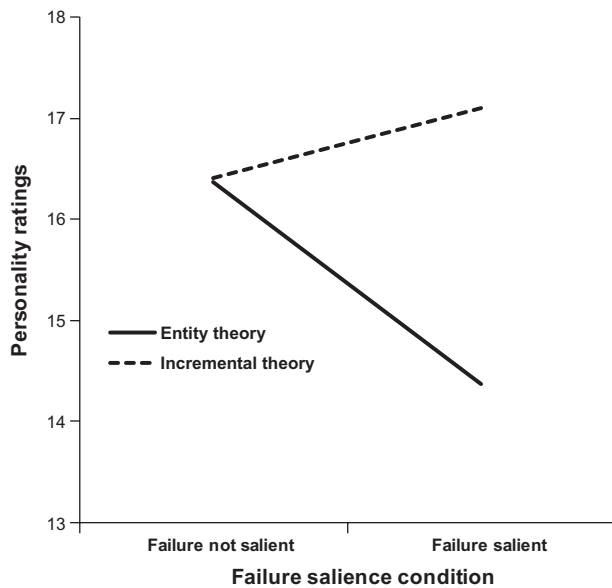


Figure 2 Interactive effects of failure salience and lay theory of self-control on ratings of the target's personality. Higher numbers indicate a more positive personality. The line marked "entity theory" represents participants who scored 1 *SD* lower than the mean on the lay theories of self-control measure, whereas the line marked "incremental theory" represents participants who scored 1 *SD* higher than the mean on the measure.

the interactive effects of implicit theory and failure salience moderated by self-regulatory domain.

Whereas Experiment 1 provides evidence that lay theories predict judgments of those who have failed at self-control, in Experiment 2, we manipulated participants' lay theories. By manipulating lay theories of self-control, Experiment 2 enabled us to more convincingly demonstrate the causal role of fixed theories in harsh judgments.

Experiment 2

In Experiment 2, we sought to extend the results of Experiment 1 by manipulating lay theories of self-control. Further, because we found no differences in self-control domain in Experiment 1, we simplified Experiment 2 by focusing only on the obesity domain.

Participants in this experiment first read a research summary that described the nature of self-control as being either a fixed trait or a malleable trait, respectively. Following this, they were exposed to a profile of an obese target and subsequently rated the target on a variety of dimensions. We predicted that when a self-control failure was made salient, participants who read the entity summary would make harsher judgments about the target than participants who read the incremental summary.

Method

Participants

One hundred fifty-six undergraduates (69 males, 87 females) participated in return for partial course credit. All participants were run individually in testing sessions lasting approximately 30 minutes. The majority (89.1%) of participants were between the ages of 18 and 20, with the rest being 21 or older. The sample was largely (69.9%) European American. 7.1% of the sample were African American, 9.6% were Asian, and 13.4% reported another ethnic category or preferred not to answer.

Procedure

Upon entering the laboratory, participants were told that they would be participating in an experiment examining different aspects of cognition, memory, and interpersonal relationships. As such, they were instructed that they would be working on a series of unrelated tasks for the next half hour.

After signing an informed consent sheet, participants were introduced to an ostensible memory task. Specifically, they were given a one-page summary regarding research findings pertaining to self-control. Participants were instructed to carefully read the summary because they were told that at the end of the experiment, they would be asked questions about it. The experimenter expressed the importance of remembering both main points and also some details from the summary.

Similar to other research on implicit theories (e.g., Bergen, 1991), we used a research summary as a way of manipulating lay theory. Half of the participants were given a summary that suggested that psychologists have come to the conclusion that self-control is a fixed entity, whereas half were given a summary describing self-control as malleable. For instance, participants in the fixed condition were told that scientific evidence suggests that "one's self-control ability is very difficult, if not impossible, to change," whereas participants in the malleable condition were told "people can improve their self-control ability and actually get better at tasks that require self-control." Each summary also contained descriptions of scientific studies, with the results altered to reflect either an entity or incremental theory.

After participants had spent approximately 5 minutes reading and studying the summary, the experimenter collected the summary and presented the participant with a profile of Jennifer. Participants were given the same instructions regarding the profile that were used in Experiment 1. In both of the profiles, Jennifer was described as being obese (BMI of 39.9). In one of the profiles, a failure at self-control was explicitly made salient with the phrase "she has tried to

lose weight in the past but has been unsuccessful,” whereas no mention of this was made in the other profile. Thus, in both profiles, Jennifer was described as being obese, but in the second, we explicitly mentioned a past dieting failure.

After participants had spent 5 minutes reading the profile, the experimenter collected the profile and administered a questionnaire packet. The questionnaire packet again contained the future outcomes measure ($\alpha = .67$) and a modified version of the Rokeach Value Scale that assessed the target's personality ($\alpha = .94$), as well as a demographics and target characteristics questionnaire. Included in the target characteristic questionnaire was a manipulation check item probing whether or not the participant believed that one's self-control ability could or could not change. Responses were made on a 7-point Likert scale with anchors of 1 (*cannot change*) and 7 (*can change*). As in Experiment 1, the questionnaires were counterbalanced, with the restriction that participants always answered all of the questions about Jennifer before answering any questions about themselves. Participants completed the questionnaire packet without access to either the summary or the profile, and they were debriefed and released upon completion.

Results

Perception of target's characteristics and manipulation check

Nearly all (99.4%) of the participants correctly recalled that the target in the profile was female. Furthermore, 76.9% of participants accurately recalled Jennifer's weight as being exactly 240 pounds, with a mean weight reported of 235.5 pounds. As in Experiment 1, participants appeared to adequately recall the critical information from the profile.

We also examined the extent to which our manipulation successfully influenced participants lay theory of self-control. Participants who initially read the fixed research summary reported that self-control was less able to change ($M = 5.28$, $SD = 1.58$) than participants who read the malleable summary ($M = 6.31$, $SD = 1.07$), $t(154) = -4.71$, $p < .001$, confirming that participants who read the entity summary held a more fixed view of self-control than participants who read the incremental summary.

Ratings of target

We examined participants' ratings of the target's future outcomes and personality.

Future outcomes

The future outcomes measure was analyzed using a 2 (entity summary vs. incremental summary) \times 2 (failure salient vs. not salient) ANOVA. A significant main effect for theory, $F(1, 152) = 9.13$, $p < .01$ and a marginally significant main effect for failure salience emerged, $F(1, 152) = 3.69$, $p < .06$. These effects were qualified by a significant interaction, $F(1, 152) = 5.25$, $p < .03$ between the two variables. Subsequent simple effects analyses were conducted to clarify the nature of the interaction. When the self-control failure was not made salient, participants who read the entity summary did not differ in their ratings of Jennifer's future outcomes than did participants who read the incremental summary, $F(1, 153) = .19$, *ns*. However, when the self-control failure was made salient, participants who read the entity summary were less optimistic about Jennifer's future success than were participants who read the incremental summary, $F(1, 153) = 14.51$, $p < .001$ (see Table 3 for means).

Personality

Ratings of Jennifer's personality were analyzed using a 2 (entity summary vs. incremental summary) \times 2 (failure salient vs. not salient) ANOVA. Significant main effects emerged for both theory, $F(1, 152) = 3.94$, $p < .05$, and failure salience, $F(1, 152) = 6.93$, $p < .01$. However, these effects were qualified by a significant interaction, $F(1, 152) = 4.32$, $p < .04$. Simple effects analyses revealed that when the self-control failure was not salient, no differences emerged amongst participants who read the entity or incremental summary in regards to ratings of Jennifer's personality, $F(1, 153) = .03$, *ns*. However, when the self-control failure was made salient, participants who read the entity summary were harsher in their personality ratings than were participants who read the incremental summary, $F(1, 153) = 8.43$, $p < .01$ (see Table 3 for means). Thus, when Jennifer's self-control failure was made salient, participants who read the entity summary judged her more harshly than participants who read the incremental summary.

Table 3 Experiment 2: Responses on Key Variables by Condition

Variable	Self-control failure explicit		Self-control failure not explicit		<i>F</i> statistic for interaction
	Entity	Incremental	Entity	Incremental	
Future outcomes	5.19 (1.08)	4.30 (1.20)	4.48 (.97)	4.36 (.87)	5.25*
Personality	15.76 (3.47)	18.09 (3.78)	18.46 (4.36)	18.41 (2.29)	4.32*

Note. $n = 156$. Mean (standard deviation). For future outcomes, lower numbers indicate more positive future outcomes. For the personality variable, higher numbers indicate higher levels of the variable. * $p < .05$.

Discussion

The results of Experiment 2 provide complementary evidence that holding more fixed theories of self-control leads to harsher judgments of individuals who have failed at self-control. In addition to replicating our previous findings, the results of Experiment 2 more strongly suggest that entity theories cause harsher judgments of those that fail at self-control. Participants' lay theories were manipulated as opposed to measured, and the effects remained largely the same.

General discussion

People deemed to be suffering from a lack of self-control or discipline are often the targets of negative attitudes or even outright discrimination by others (Brownell et al., 2005). The current results suggest that in some circumstances, these negative perceptions may be predicted by lay theories of self-control. We found that participants who either naturally held more entity views of self-control (Experiment 1) or who were led to believe that self-control ability is fixed (Experiment 2) were harsher than incremental theorists in their judgments of targets whose self-control failure was salient. Specifically, people who more strongly endorsed an entity view of self-control rated targets who failed at self-control as being less likely to resolve their self-control dilemma (e.g., lose weight) in the future and as having a worse personality. Finding these effects after lay theories were manipulated (as opposed to measured) suggests that holding an entity view of self-control contributes causally to negative judgments about those who fail at self-control.

Why entity theories may lead to more negative perceptions

Participants holding an entity theory of self-control were only harsher than incremental theorists in their judgments when attention was drawn to the target's self-control failure. That is, when no mention was made of the target having tried and failed in the past to lose weight or to quit smoking, participants' lay theories did not influence judgments of the target. We suggest that this is because from a self-control perspective, if a person has not tried to lose weight or to quit smoking, it is not clear that they have failed at self-control. However, once an individual has tried to lose weight or quit smoking and has failed, it becomes clearer that they are relatively low in self-control ability. Similar to findings in other domains (Chiu, Hong et al., 1997), this information would likely prompt people holding an entity theory to label the target as being low in self-control, and, to become less optimistic than incremental theorists about the target's possibility for future self-control success. After all, if self-control ability is perceived as fixed, and the target has illustrated low

self-control ability, there would be little reason to believe that the target would improve their self-control ability in the future. Those holding an incremental theory, on the other hand, have a view of self-control that is more optimistic in regards to the potential for individuals to change and improve their self-control ability.

Perhaps counterintuitively, when faced with evidence that the target was low in self-control ability, participants who more strongly endorsed an entity view of self-control not only became less optimistic about the target's chances for future self-control success, they also became harsher in their judgments of the target's personality. In our experiments, we found consistent evidence for this change in judgments, but it is not entirely clear exactly why the change occurred.

It is possible that upon recognizing that the target was low in self-control ability, participants who more strongly endorsed an entity view of self-control adopted a more stereotypical view of the target. Research suggests that people with entity theories readily adopt stereotypes (Levy et al., 1998), so participants with more entity views of self-control may have relied on negative stereotypes about people with low self-control when making their evaluations of a target who explicitly failed at self-control. Alternatively, upon learning that the target was low in self-control ability, people who more strongly endorsed an entity view of self-control may have relied on the halo effect heuristic when making their judgments about the target's personality (Nisbett & Wilson, 1977). Specifically, once they labeled the target as being low in self-control, they may have allowed this negative information to influence their subsequent judgments. Thus, although it may seem counterintuitive that people with an entity theory would denigrate people who seemingly have no control over their self-control performance (because their self-control ability is fixed), an increased reliance on stereotypes or a reliance on the halo effect heuristic may have accounted for these reactions.

Implications

The current findings may have important implications for predicting negative judgments and bias aimed at individuals who have failed at self-control. Most notably, it appears that lay theories regarding self-control not only influence an individual's own self-control performance (Job et al., 2010), but that they also contribute to one's perception of others. The current research also suggests that these negative perceptions may be wide in scope. For instance, not only did participants who more strongly endorsed an entity view of self-control use the target's self-control-related behavior as a basis to judge the likelihood that the target would experience future self-regulatory failure, they also used that information as a basis to determine that the target had a less desirable personality.

Interestingly, the results suggest that obese individuals and smokers who have tried to lose weight or quit smoking and failed are viewed more negatively by entity theorists relative to incremental theorists than obese individuals and smokers who have never tried to lose weight or quit smoking at all. That is, whereas the negative bias and discrimination levied at obese people and smokers may be widespread (Brownell et al., 2005; Kim & Shanahan, 2003), it is possible that the effects of lay beliefs may be constrained to situations where self-control failure is particularly salient. In other words, entity theorists may reserve judgment regarding an obese person or a smoker until it becomes clear that that person has failed at self-control. At least in the context of obesity and smoking, self-control failure appears to be quite common. Most calorie-restricting diets typically lead to little if any long-term weight loss (Mann et al., 2007) and only 7%–37% of smokers who try to quit with various medications and 14.6% who use counseling alone are able to quit smoking and remain abstinent for 6 months (Fiore et al., 2008).

Limitations and future directions

Whereas the current findings may help to explain and predict negative social judgments and bias aimed at individuals who are viewed as having failed at self-control, several limitations should be mentioned. First, in the current investigation, we relied solely on self-report measures. Whenever self-report measures are used, there is a risk that participants are not able to accurately assess their own internal states or that they are not reporting them honestly. In these experiments, we were interested in participants' particular opinions, and we took measures to reduce self-consciousness and experimental demand by testing participants individually (or in some cases in small groups with participants seated far from each other), ensuring confidentiality, and avoiding any identifying information. Future studies may wish to incorporate behavioral measures, such as reactions to an actual target rather than written reactions to a vignette character.

Further, it is unclear from the current investigation whether or not lay theories of self-control predict

judgments of targets who have failed at self-control over and above more general lay theories of personality as a whole. In the current set of experiments we followed past research by measuring lay theories only at the domain level and not at a more general level as well (see Beer, 2002; Lochbaum et al., 2006). Whereas previous research has suggested that domain-specific lay theories (e.g., intelligence, morality) are correlated with, but not wholly redundant with, more general lay theories of personality (Dweck et al., 1995), it is unclear if this pattern of results would hold for the domain of self-control. Future research may want to verify the independent contributions of self-control specific and more general lay theories on judgments of self-control relevant targets.

Lastly, in the current investigation, we only explored the influence of lay theories on judgments in the obesity (Experiments 1 and 2) and smoking (Experiment 1) domains. Clearly though, self-control is critical to success in numerous other areas. For instance, failures of self-control have been implicated in the inability to control alcohol consumption, gambling, and criminal behavior (Baumeister et al., 1994; Muraven, Collins, & Nienhaus, 2002; Muraven, Pogarsky, & Shmueli, 2006; Shmueli & Muraven, 2007). It is possible that the concept of self-control lay theories could fruitfully be applied to judgments in these and other self-control domains.

Conclusion

The current research examined perceptions of individuals who have failed to control their weight or smoking behavior. Across two experiments, we found evidence that the concept of self-control lay theories can be applied to judgments and perceptions about individuals who have failed at self-control. When self-control failure is salient, lay theories influence judgments about individuals who have failed at self-control. In particular, people who more strongly endorse an entity view of self-control are harsher than incremental theorists in their perceptions of targets who have failed at self-control.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Anderson, L. A., Eyler, A. A., Galuska, D. A., Brown, D. R., & Brownson, R. C. (2002). Relationship of satisfaction with body size and trying to lose weight in a national survey of overweight and obese women aged 40 and older, United States. *Preventive Medicine, 35*, 390–396.
- Baumeister, R. F., Heatherton, T. F., & Tice, D. M. (1994). *Losing control: How and why people fail at self-regulation*. San Diego, CA: Academic Press.
- Beer, J. S. (2002). Implicit theories of shyness. *Journal of Personality and Social Psychology, 83*, 1009–1024.
- Bergen, R. (1991). *Beliefs about intelligence and achievement-related behaviors*. Unpublished doctoral dissertation, University of Illinois, Champaign-Urbana.
- Brownell, K. D., Puhl, R. M., Schwartz, M. B., & Rudd, L. (Eds.). (2005). *Weight bias: Nature, consequences, and remedies*. New York, NY: Guilford Publishers.

- Cancer Council NSW. (2001). *Kiss a non-smoker. Enjoy the difference*. Sydney: Ultimo.
- Chiu, C., Dweck, C. S., Tong, J. Y., & Fu, J. H. (1997). Implicit theories and conceptions of morality. *Journal of Personality and Social Psychology, 73*, 923–940.
- Chiu, C., Hong, Y., & Dweck, C. S. (1997). Lay dispositionism and implicit theories of personality. *Journal of Personality and Social Psychology, 73*, 19–30.
- Dweck, C. S., Chiu, C., & Hong, Y. (1995). Implicit theories and their role in judgments and reactions: A world from two perspectives. *Psychological Inquiry, 6*, 267–285.
- Dweck, C. S., Hong, Y., & Chiu, C. (1993). Implicit theories: Individual differences in the likelihood and meaning of dispositional inference. *Personality and Social Psychology Bulletin, 19*, 644–656.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*, 256–273.
- Fiore, M. C., Jaen, C. R., Baker, T. B., Bailey, W. C., Benowitz, N. L., Curry, S. J., et al. (2008). *Treating tobacco use and dependence: 2008 update*. Rockville, MD: US Department of Health and Human Services. Public Health Service.
- Hoppe, R., & Ogden, J. (1997). Practice nurses' beliefs about obesity and weight related interventions in primary care. *International Journal of Obesity and Related Metabolic Disorders, 21*, 141–146.
- Job, V., Dweck, C. S., & Walton, G. M. (2010). Ego depletion—Is it all in your head? Implicit theories about will-power affect self-regulation. *Psychological Science, 21*, 1686–1693.
- Jones, J. M. (2006, July 18). Smoking habits stable; most would like to quit. *Gallup News Service*. Retrieved December 7, 2010, from <http://www.gallup.com/poll/23791/Smoking-Habits-Stable-Most-Would-Like-Quit.aspx>
- Kim, S. H., & Shanahan, J. (2003). Stigmatizing smokers: Public sentiment toward cigarette smoking and its relationship to smoking behaviors. *Journal of Health Communication, 8*, 343–367.
- Levy, S. R., Stroessner, S. J., & Dweck, C. S. (1998). Stereotype formation and endorsement: The role of implicit theories. *Journal of Personality and Social Psychology, 74*, 1421–1436.
- Lochbaum, M. R., Bixby, W. R., Lutz, R. S., Parsons, M., & Akerhielm, T. (2006). Implicit theories and physical activity patterns: The mediating role of task orientation. *Individual Differences Research, 4*, 58–67.
- Mann, T., Tomiyama, A. J., Westling, E., Lew, A., Samuels, B., & Chatman, J. (2007). Medicare's search for effective obesity treatments: Diets are not the answer. *The American Psychologist, 62*, 220–233.
- Muraven, M., Collins, L. R., & Nienhaus, K. (2002). Self-control and alcohol restraint: An initial application of the Self-Control Strength Model. *Psychology of Addictive Behaviors, 16*, 113–120.
- Muraven, M., Pogarsky, G., & Shmueli, D. (2006). Self-control depletion and the general theory of crime. *Journal of Quantitative Criminology, 22*, 263–277.
- Nisbett, R. E., & Wilson, T. D. (1977). The halo effect: Evidence for unconscious alteration of judgments. *Journal of Personality and Social Psychology, 35*, 250–256.
- Pipe, A., Sorensen, M., & Reid, R. (2009). Physician smoking status, attitudes toward smoking, and cessation advice to patients: An international survey. *Patient Education and Counseling, 74*, 118–123.
- Quinn, D. M., & Crocker, J. (1999). When ideology hurts: Effects of belief in protestant ethic and feeling overweight on the psychological well-being of women. *Journal of Personality and Social Psychology, 77*, 402–414.
- Raupach, T., Shahab, L., Baetzing, S., Hoffman, B., Hasenfuss, G., West, R., et al. (2009). Medical students lack basic knowledge about smoking: Findings from two European medical schools. *Nicotine and Tobacco Research, 11*, 92–98.
- Rokeach, M. (1973). *The nature of human values*. New York: The Free Press.
- Santuzzi, A. M. (2007). Perceptions and metaperceptions of negative evaluation: Group composition and meta-accuracy in a social relations model. *Group Processes & Intergroup Relations, 10*, 383–398.
- Schwartz, M. B., Chambliss, H. O., Brownell, K. D., Blair, S. N., & Billington, C. (2003). Weight bias among health professionals specializing in obesity. *Obesity Research, 22*, 2033–2039.
- Shmueli, D., & Muraven, M. (2007). Depletion of self-control strength leads to increased deviance. In Froeling K. T. (Ed.), *Criminology: Research focus* (pp. 69–96). Hauppauge, NY: Nova Science Publishers, Inc.
- Teachman, B. A., & Brownell, K. D. (2001). Implicit anti-fat bias among health professionals: Is anyone immune? *International Journal of Obesity, 25*, 1525–1531.