Changing Theories of Change:
Strategic Shifting in Implicit Theory Endorsement

Scott A. Leith, Cindy L. P. Ward,
Miranda Giacomin, and Enoch S. Landau
Wilfrid Laurier University

Joyce Ehrlinger
Washington State University

Anne E. Wilson
Wilfrid Laurier University

People differ in their implicit theories about the malleability of characteristics such as intelligence and personality. These relatively chronic theories can be experimentally altered, and can be affected by parent or teacher feedback. Little is known about whether people might selectively shift their implicit beliefs in response to salient situational goals. We predicted that, when motivated to reach a desired conclusion, people might subtly shift their implicit theories of change and stability to garner supporting evidence for their desired position. Any motivated context in which a particular lay theory would help people to reach a preferred directional conclusion could elicit shifts in theory endorsement. We examine a variety of motivated situational contexts across 7 studies, finding that people's theories of change shifted in line with goals to protect self and liked others and to cast aspersions on disliked others. Studies 1–3 demonstrate how people regulate their implicit theories to manage self-view by more strongly endorsing an incremental theory after threatening performance feedback or memories of failure. Studies 4–6 revealed that people regulate the implicit theories they hold about favored and reviled political candidates, endorsing an incremental theory to forgive preferred candidates for past gaffes but leaning toward an entity theory to ensure past failings "stick" to opponents. Finally, in Study 7, people who were most threatened by a previously convicted child sex offender (i.e., parents reading about the offender moving to their neighborhood) gravitated most to the entity view that others do not change. Although chronic implicit theories are undoubtedly meaningful, this research reveals a previously unexplored source of fluidity by highlighting the active role people play in managing their implicit theories in response to goals.

Keywords: implicit theories, incremental, entity, motivated reasoning

I know who I WAS when I got up this morning, but I think I must have been changed several times since then.
　　　　　　　—Lewis Carroll, *Alice's Adventures in Wonderland*

Ain't never changed, this is Jay every day

("I never change!")

I never change, this is Jay every day

("I never change!")

　　　　　　　—Jay-Z, "Never Change"

Scott A. Leith, Cindy L. P. Ward, Miranda Giacomin, and Enoch S. Landau, Department of Psychology, Wilfrid Laurier University; Joyce Ehrlinger, Department of Psychology, Washington State University; Anne E. Wilson, Department of Psychology, Wilfrid Laurier University.

Correspondence concerning this article should be addressed to Scott A. Leith or Anne E. Wilson, Department of Psychology, Wilfrid Laurier University, 75 University Avenue West, Waterloo, Ontario, Canada, N2L 3C5. E-mail: leit5130@mylaurier.ca or awilson@wlu.ca

Western culture is replete with sayings, proverbs, and song lyrics that capture seemingly divergent beliefs about change and stability. "A leopard cannot change its spots;" yet, you can always "turn over a new leaf." Alicia Keys sings about a "brand new me," and Bob Dylan's times were perpetually a-changin'. Conversely, Bob Seger insists that he is "like a rock," and Garth Brooks wants the world to know "that it will not change me." Notions about both change and stability are enmeshed in people's understanding of themselves and the world around them; people often see the truth in, and endorse, both viewpoints. Indeed, Western culture presents mixed messages about the desirability of change and stability. On one hand, being "steadfast and true" is as important a virtue as "changing with the times." On the other hand, stability can be seen as a sign of stubbornness or stagnation, and change can be construed as an indicator of unpredictability or "flip-flopping."

Beliefs about both change and stability are prevalent culturally and evidence suggests that people have knowledge of and access to both beliefs (Poon & Koehler, 2006). That said, previous research suggests that people tend to chronically endorse one perspective over the other. People who hold incremental theories view traits and abilities as malleable and changeable with effort and time, whereas people who hold entity theories view these same dimensions as relatively fixed, unalterable aspects of a person (Dweck &

Leggett, 1988). Although these beliefs are measured on a continuous scale, two dichotomous theories (entity and incremental) are usually described, reflecting relatively stronger endorsement of one or the other perspective. For the sake of brevity, we sometimes refer to these dichotomous implicit theories, but do so while recognizing the continuous nature of the beliefs.

Research on implicit theories of stability and change (Dweck, Chiu, & Hong, 1995a; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Lin, & Wan, 1999) suggests that these theories function like knowledge structures (Chiu, Hong, & Dweck, 1997; Dweck, Hong, & Chiu, 1993; Plaks, Levy, & Dweck, 2009) such that people regularly lean toward using one theory over the other as a lens through which they interpret themselves and the world around them. Implicit theories can be affected by situational influences and feedback: For example, implicit theories of intelligence are shaped by the type of praise that teachers and parents offer in response to the student's achievements (Mueller & Dweck, 1998) and the attitudes that important others express about intelligence (Good, Rattan, & Dweck, 2012). Implicit theories remain stable over time in the absence of an event or manipulation that leads students to reflect upon and revise their view (e.g., Blackwell, Trzesniewski, & Dweck, 2007; Dweck, Chiu, & Hong, 1995a). However, experimental techniques and, more recently, educational interventions have been successfully used to change students' theories by leading them to consider evidence for either a fixed or malleable view of intelligence (e.g., Aronson, Fried, & Good, 2002; Blackwell et al., 2007; Hong et al., 1999; Miller et al., 2012; Molden, Plaks, & Dweck, 2006; Plaks & Stecher, 2007; Plaks, Stroessner, Dweck, & Sherman, 2001). A host of studies has shown that these theories can be a powerful determinant of people's attributions (Levy, Stroessner, & Dweck, 1998), goals (Dweck et al., 1995a), responses to failure (Hong et al., 1999) and many other outcomes (Burnette & Finkel, 2012; Chiu et al., 1997; Chiu, Dweck, Tong, & Fu, 1997; Halperin, Russell, Trzesniewski, Gross, & Dweck, 2011; Kammrath & Dweck, 2006; Nussbaum & Dweck, 2008).

Although past research certainly demonstrates that implicit theories can shift in response to external situational forces (anything from rather subtle feedback from others to explicit educational interventions), little is known about how people might actively regulate their own endorsement of these theories in response to situational goals. We propose that people's theories of change and stability also change in motivated ways. People often face situations where they must make judgments about the temporally extended self or others (Peetz & Wilson, 2008). They must consider information about past performance, attributes, or behavior and determine how relevant it is to their present appraisals or future expectations for that individual. However, determining the relevance of past information to present or future judgments is often ambiguous, and people may not always be motivated only by accuracy goals. In cases where people are motivated to reach a particular conclusion about how the past pertains to the present or future, they may wish to either emphasize or downplay its relevance (Peetz & Wilson, 2014; Ross & Wilson, 2002). For instance, an individual might prefer to believe that a failure does not represent an enduring deficit in his or her ability: in this instance, endorsing an implicit theory of malleability helps to support their desired conclusion. In contrast, endorsing a theory of stability after

success might be gratifying because it holds the promise of continued triumph in the future.

This perspective is in line with classic theory and research on motivated reasoning (Kunda, 1990). Kunda eloquently argued that the mechanism underlying motivated reasoning is the differential recruitment of cognitive processes, representations, and beliefs. Specifically, in some cases people are motivated to simply reason the most accurate conclusion given the evidence, but in many cases they are motivated to reach a particular, directional conclusion. Despite what they want to believe, however, people are not typically free to reach whatever conclusion they desire simply because they prefer it—they make an attempt at the appearance of objectivity (Pyszczynski & Greenberg, 1987) by searching memory and constructing beliefs that would support that view. Past research demonstrates that people will adjust or even jettison a prior conviction when a new attitude or belief supports their desired conclusions (e.g., Jost, Pelham, Sheldon, & Sullivan, 2003; Schumaker & Slep, 2004; Skitka, Bauman, & Mullen, 2008; Skitka & Mullen, 2008; Tesser, 2001). For example, after reading about successful or unsuccessful targets who shared some attributes with themselves, people shifted their causal theories about what attributes led to marital and academic success to correspond with the attributes they personally possessed (Kunda, 1987).

Might people creatively reinterpret their views on the stability or malleability of personal attributes to recruit evidence in favor of their desired conclusion? As discussed at outset, it seems likely that people have access to both implicit theories. Supporting this view, Poon and Koehler (2006) have argued that implicit theories can be understood from a knowledge-activation framework: people have concurrent knowledge consistent with both change and stability, and that their dominant implicit theory at any given time depends on what knowledge has been primed. They demonstrated that when prompted to explain either stable or changeable behavior (e.g., the story of an individual who showed marked personality stability through life, or marked change), participants were able to generate explanations consistent with the relevant implicit theory. Participants were also able to generate examples supporting proverbs reflecting either entity beliefs (e.g., "can't teach an old dog new tricks") or incremental beliefs (e.g., "experience is the best teacher").

We build on Poon and Koehler's (2006) perspective that people have knowledge of both implicit theories available to them, and Kunda's (1990) theorizing that people will change their attitudes as much as reasonably possible, constrained by their initial position. We go further, however, to say that people might strategically gravitate toward the implicit theory that best suits their current goals, but will not shift their theories in the absence of such goals. Over seven studies, we test the hypothesis that implicit theories of stability and change are more sensitive to motivational influences than previously demonstrated. We contend that people shift their implicit theories in ways that allow them to support motivated directional conclusions about themselves and about liked and disliked others. We do not predict wholesale jumps from one end of the continuum to the other. Rather, we predict small but systematic and meaningful movement from one's chronic implicit theory toward the implicit theory that will be most likely to support their goals in a given situation.

Malleability of Implicit Theories

When are people motivated to reach directional conclusions? We suggest that people might wish to arrive at a particular conclusion any time a relevant goal is activated—whether it is to regulate views of self or someone else, across multiple domains and a variety of contexts. Consistent with recent theorizing about essential similarities across many motivated responses to goals and threats (Jonas et al., 2014; Proulx & Heine, 2010; Tesser, 2001), we do not focus on a specific reason why people are motivated to reach a desired conclusion but rather sample from a range of contexts where people are motivated by a particular conclusion about the self (e.g., Baumeister, 1998; Higgins, 1996; Sedikides, 1993) or others (Klein & Kunda, 1992; Skitka, Bauman, & Mullen, 2008). These predictions should apply equally to motivated conclusions about the self or others. For instance, if Erika receives disappointing feedback on an intelligence test, she might be especially motivated to view intelligence as malleable and think about her score as something that can be improved with effort. Endorsing a stability theory would be more threatening to Erika, suggesting her shortcomings are permanent. However, if Tim receives a very high score on the same assessment, he would not be threatened by the notion that intelligence is fixed, because it could allow him to bask in the assurance of his enduring acumen. Our predictions are somewhat asymmetrical in that after success, Tim may enjoy a theory of stability, but would not be especially threatened by a theory of malleability: he could simply imagine further improvement to his considerable skills. Likewise, people are sometimes motivated to view other people in a flattering—or disparaging—light. If Kyle is rooting for a particular *American Idol* contestant, he may dismiss their dismal performance in a given week as a learning experience, whereas if Kelly is less invested in that contestant's success, she might see that week's poor performance as a good indication of the singer's permanently limited talent. Similarly, a parent in favor of harsh criminal sentencing ("once a thief, always a thief") might find greater value in malleability beliefs in the event that one of his or her children were to get arrested ("they just need another chance").

Stated more generally, we suggest that when faced with unflattering evidence of one's own (or a liked other's) performance, people may gravitate toward the reassuring notion that people can change. It is plausible that people will shift their preference toward an entity theory after success to highlight its permanence—but this tendency might be weaker because neither implicit theory is especially threatening after success. Conversely, when people consider the glories and shortcomings of disliked others, they may be inclined to shift their views to more often emphasize the stability of flaws and the transience of greatness.

Overview of the Present Research

To test these overarching hypotheses, we conducted seven studies examining how people might shift their implicit theories to meet a variety of goals. In Study 1, we manipulated implicit theories of intelligence directly (describing them as changeable or fixed), similar to past research (e.g., Molden et al., 2006). We expected to replicate past research indicating that people's implicit theories would shift when given direct evidence of the validity of one theory or another. However, we also manipulated whether participants believed they had performed well or poorly on an

intelligence test. We reasoned that in the absence of a threat (when they performed well on the test), people would accept whatever theory they were provided. However, if participants believed they did poorly on the test, accepting the theory that intelligence is fixed would force them to draw unwanted conclusions about their intelligence. Accordingly, we predicted that participants who received failure feedback would be especially resistant to an entity theory message (that their intelligence is fixed). In Study 2, we gave participants success or failure feedback on a bogus test of social intelligence. We expected that if someone was given failure feedback, they would shift toward a more incremental theory to lessen the failure's impact. To test our hypothesis that implicit theories shift only when motivation is strong enough, we also manipulated task legitimacy. We hypothesized that if participants were able to dismiss their failure because the task was unreliable, they would not be motivated to shift their implicit theory. In Study 3, we assigned people to recall either a positive or a negative memory about the self or an acquaintance. We predicted that after recalling a personal (but not an acquaintance's) past failure, participants would endorse a more incremental perspective, allowing them to unchain themselves from the negative implications of their undesirable past event. In Studies 4, 5, and 6, we examined whether people would shift their implicit theory endorsement to support desired perceptions of relevant others: political candidates affiliated with one's own preferred party or from the opposing party. Participants read unflattering information about political candidates' actual past behaviors (Study 4) and were randomly assigned to read about fabricated favorable or unfavorable political pasts regarding a candidate they favored or opposed (Study 5, Study 6). We predicted that participants would shift their implicit theory about change in ways that would support their own candidate and discredit the unwanted candidate. Finally, in Study 7, we examined implicit theory shifting to meet a different goal: that of protecting one's family from threat. Participants read about a (hypothetical) previously convicted child sex offender being released unsupervised into a community. We experimentally manipulated threat by depicting the release location as distant from the participant's community (low threat) or inside the participant's community (high threat). We also examined threat with a categorical variable—whether participants were parents or not. We expected that parents reading about a child sex offender nearby would be most threatened and most motivated to justify their opposition by shifting toward the view that people simply do not change. These various approaches allow us to provide converging evidence of people's motivated shifts in their implicit theories of change to maintain desired conclusions about the self and about liked, disliked, and even threatening others.

Study 1

Study 1 was adapted from past research that has manipulated implicit theories of intelligence. Participants were given a (bogus) intelligence test, led to believe they scored very well or poorly (which should either flatter or threaten self-image goals), and then were provided with information arguing that intelligence was either malleable or fixed. Subsequently, participants were asked to report their implicit theories of intelligence. People typically do at least temporarily shift their implicit theories in response to persuasive messages arguing for stability or change, hence we expect

this manipulation to affect their endorsement of stability beliefs. However, we thought that people might be more hesitant to accept the implicit theory provided to them when that theory did not support their self-image goals. Specifically, we predicted that after succeeding on the intelligence task, people would be quite willing to adopt either an incremental or entity theory (depending on the theory highlighted in their assigned condition). However, after receiving failure feedback, we expected participants would be resistant to accepting an entity theory even after reading a persuasive argument in its favor, as it suggests that their unwanted performance is a mark of lasting ability.

Method

Participants. One hundred twenty-four undergraduate students from a Canadian university participated in the study for course credit. Each experimental session included between one and six students in separate cubicles.

Procedure.

Premeasure. Participants were invited to take part in a study investigating general perceptions of intelligence. Upon arriving in the lab, participants were seated in individual booths where they completed a questionnaire containing several measures unrelated to the present study. Embedded within this filler questionnaire were two items that measured implicit theories of intelligence. We chose to embed a small number of premeasure items into a larger filler questionnaire to obscure researchers' interest in these items in particular, and to reduce the chance that participants would later recall and feel pressure to be consistent with their prior responses. These questions were adapted from Dweck (1999) and asked participants to indicate how much they agreed or disagreed (on a 6-point scale) with the following statements: "Although I can learn new things, I feel that my intelligence remains the same" and "I feel I cannot change my intelligence very much." Scores for each question were reverse coded such that higher scores indicate more incremental views of intelligence, and the two items were averaged ($\alpha = .78$).

Success/failure manipulation. Participants then completed a test made up of 10 Remote Associate Test items (RAT; McFarlin & Blascovich, 1984). Prior to completing the task, participants were told that the RAT is a nationally recognized technique for assessing intelligence, reasoning, and problem-solving ability. The RAT asks participants to think of a word that relates to each of three given stimulus words (e.g., head, street, dark: light). Participants were randomly assigned to receive one of two versions of this RAT test. Participants assigned to the "success" condition were given a test made up of 10 relatively easy RAT items. In contrast, participants in the "failure" condition received a test made up of 10 hard RAT questions. Upon completion, participants were given an answer key and were told to score themselves on the test. The easy and hard tests resulted in more or fewer correct answers, respectively, allowing the experimenters to use the experience of success or failure as the basis for further feedback. Furthermore, biased percentile ranks were assigned to each score, ensuring that all "success" participants scored themselves in the 60th percentile or above and all "failure" participants scored below the 60th percentile.

Intelligence implicit theory manipulation. Following the success/failure feedback, participants were randomly assigned to read

one of two descriptions. In the incremental condition, participants were told that intelligence was *unstable* over time and that RAT scores easily fluctuate and change. In the entity condition, participants were told that intelligence is *stable* over time and that RAT scores do not fluctuate or change depending on when they take the test. The information participants received, adapted from Plaks and Stecher (2007), was as follows:

> One's intelligence and reasoning skills are said to be unstable [stable] in that they are [not] subject to fluctuations over time. This means that you can [not] change your overall level of intelligence through extended growth, maturity and life experience . . . Because your intelligence is unstable [stable] over time, this means that your score on the Remote Associates Test does [not] fluctuate or change depending on what time in your life you take the test. Therefore, the score that you received today will [not] be higher or lower than the score you would receive tomorrow or two weeks/months/years from now if you retook the test. Because your score on the Remote Associates Test is malleable [stable] over time, it is a good and accurate indication of one's overall intelligence.

Manipulation check. Next, participants were asked to indicate their score on the RAT and to rate how satisfied they were with the score they received on the RAT on a scale from 1 (*extremely unsatisfied*) to 7 (*extremely satisfied*).

Dependent measures. Finally, participants completed three adapted Dweck (1999) implicit theory of intelligence questions in order to measure their postmanipulation implicit theory of intelligence. For example, "Your intelligence is something about you that you can't change very much." Scores were combined and reverse coded such that higher scores indicate more incremental views of intelligence ($\alpha = .92$).

Results

Test feedback manipulation check. As expected, a 2 (test feedback: success vs. failure) $\times$ 2 (intelligence implicit theory: stable vs. malleable) between-subjects analysis of variance (ANOVA) revealed a significant main effect of task outcome, $F(1, 121) = 83.54$, $p < .001$, $\eta^2 = .41$, indicating that participants in the success condition ($M = 5.07$, $SD = 1.40$) scored significantly higher on the RAT than participants in the failure condition ($M = 2.52$, $SD = 1.67$). Similarly, participants in the success condition ($M = 5.02$, $SD = 1.48$) were more satisfied with their RAT scores than participants in the failure condition ($M = 1.90$, $SD = 1.90$), $F(1, 121) = 184.84$, $p < .001$, $\eta^2 = .60$.

Implicit theories. First, it is important to note that the brief implicit theories of intelligence premeasure did not differ by condition, $F(1, 121) = .79$, $p = .379$, $\eta^2 = .01$. Consistent with our expectations and past research manipulating implicit theories, a 2 (test feedback: success vs. failure) $\times$ 2 (intelligence implicit theory: stable vs. malleable) analysis of covariance (ANCOVA; controlling for initial implicit theory) revealed a main effect of implicit theory condition: Participants in the malleable condition ($M = 3.03$, $SD = .97$) endorsed a significantly more malleable view of intelligence than did those in the stable condition ($M = 2.51$, $SD = 1.10$, $F(1, 118) = 12.18$, $p = .001$, $\eta^2 = .09$. This result indicates a successful overall manipulation of implicit theory of intelligence among our participants.

However, implicit theories were also affected by the test feedback condition. A significant main effect of task outcome indicated

that participants in the failure condition expressed a significantly more incremental theory of intelligence ($M = 2.92$, $SD = 1.06$) than participants in the success condition ($M = 2.59$, $SD = 1.05$), $F(1, 118) = 5.61$, $p = .020$, $\eta^2 = .05$. This is in line with our speculation that people might prefer focusing on mutability after failure, but be happy enough to contemplate their enduring qualities after success.

These main effects, however, were qualified by a significant Test Feedback × Implicit Theory interaction, $F(1, 118) = 7.71$, $p = .006$, $\eta^2 = .061$ (see Figure 1). As expected, participants in the success condition reported beliefs about mutability that were consistent with their implicit theory condition, $F(1, 118) = 15.67$, $p < .001$. After participants received failure feedback, however, the implicit theories manipulation was not effective, $F(1, 118) < 1$, *ns.* More specifically, participants who read that intelligence is malleable were equally likely to endorse an incremental theory whether they were in the success and failure feedback condition, $F(1, 118) < 1$, *n*s. In contrast, participants who got failure feedback were significantly less likely to accept an entity theory even when told intelligence is stable, $F(1, 118) = 10.11$, $p = .002$. In sum, these results demonstrate that when participants received failure feedback, they tended to adopt more of an incremental perspective, regardless of the implicit theory manipulation. When participants received success feedback, they had no need to defend against unwanted conclusions about their intelligence, and adopted the perspective that was provided.

Discussion

As predicted, a direct implicit theories manipulation did affect participants' endorsement of these implicit theories, but other goals affected the theories they adopted as well. Within the success condition, we replicated the established finding that implicit theories can be temporarily induced by direct argument in favor of one or the other perspective. That is, after success feedback, participants were willing to adopt either theory, arguably because their self-concept as an intelligent individual was not threatened; it was acceptable to think of their excellence as either enduring (entity) or as further improvable (incremental). In contrast, participants appeared to resist shifting to an entity perspective after

Figure 1. Mean differences in lay theories as a function of task outcome and lay theory manipulation (Study 1). Higher numbers indicate more incremental views. Means are adjusted for covariates. Error bars indicate the standard error of the mean.

failure, even when explicitly presented with information suggesting stability of the dimension. Believing one's intelligence can change (vs. believing intelligence is fixed) leads to more desirable conclusions about the self after having been provided with dismal evidence of one's current intelligence. Importantly, however, these data also suggest an important boundary condition: When implicit theory induction conflicts with self-protection motivation, self-image concerns may trump the intended changes in perspective.

However, in this study all participants were explicitly exposed to argument in favor of one implicit theory or the other; hence, we find evidence of accepting or resisting these theories but do not directly test whether people more spontaneously shift their theories in the absence of any implicit theory information. In Study 2, we move to clarify the results of Study 1 by exposing participants to success or failure feedback without a direct implicit theory induction. Further, to test the hypothesis that these effects would occur only when people are highly motivated to reach a directional conclusion, we manipulated the legitimacy of the test. We expected that participants would only shift their implicit theories in response to feedback that is perceived as a legitimate reflection of ability. If the test was not framed as valid and legitimate, then motivation to shift their beliefs would not be present.

Study 2

In Study 2, we gave participants a novel task that purportedly measured "thin-slice social perceptiveness," a key component of social intelligence that predicts a wide range of positive life outcomes (e.g., salary, promotions, romantic success). Posttask we delivered false feedback (success or failure). We expected that if someone was given failure feedback, they would shift toward a more incremental theory to lessen the failure's impact.

Given our overarching motivated reasoning hypotheses, we also wanted to directly manipulate the extent to which participants were motivated to shift their implicit theories. Thus, we manipulated task legitimacy to alter the degree to which people would care about the task and consider it meaningful if they failed. In one condition, the task was described as new and unreliable, and in the other the task was described as rigorously tested and a very valid predictor. We hypothesized that if participants were able to dismiss their "failure" because the task was unreliable, they would not be motivated to shift their implicit theory.

Additionally, in Study 2 we sought to examine some downstream effects of implicit theory shifting. We measured participant expectation of future performance and willingness to re-take the test in future. We predicted that after experiencing a failure (in the legitimate condition), participants who shifted toward a more incremental theory would have a more optimistic outlook on their future potential, and would thus be more likely to express interest in re-taking the test. As well, in Study 2 we measured implicit theories within the general person domain and the intelligence domain, and also adapted the scale to measure social intelligence implicit theories. We expected that because the test was said to reflect social intelligence, domain-specific social intelligence implicit theories would be most prone to shift. We thought it was also plausible that people would shift their general person theories to some degree, and least likely that they would shift in the unrelated domain of intelligence, because a shift in this domain would not allow them to reach desired conclusions about social intelligence.
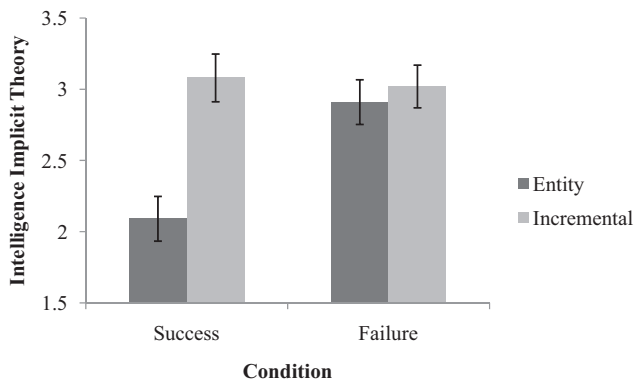
Finally, we counterbalanced when participants had the opportunity to complete the implicit theories scale—half received the scale immediately after test feedback, and half received the items about future performance and re-take willingness first, with the implicit theories scale afterward. If the shift occurs solely when "on paper" (when participants are explicitly presented with an implicit theories measure), we might expect to find an effect only in the "implicit theories first" condition. However, if people to some degree spontaneously shift implicit theories even when un-prompted by a questionnaire, then the counterbalance condition may not matter.

Method

Participants. Two hundred forty-six American residents re-cruited from Amazon's Mechanical Turk participated in our online study in exchange for $0.50 dollars. Participants who failed an attention check or who self-identified in a final question as having not been focusing on the task or measures were excluded (36 participants). The final sample consisted of 210 participants (123 women; $M_{age} = 37.19$, $SD = 14.42$, range = 18–78).

Design and procedure. The study used a 2 (feedback: success vs. failure) × 2 (legitimacy: unreliable vs. reliable) × 2 (counter-balance: implicit theory scale before or after willingness ratings) design. Among other filler items (to mask the focus on the pre-measure), participants first responded to three general person and one intelligence implicit theory item. Following this, all partici-pants read instructions describing "thin-slice social perceptive-ness" as a key component of social intelligence that enables people to "intuit and predict a lot about people they have just met or seen" on the basis of very little exposure. We told participants that people vary in this ability and that it predicts a wide range of measures of life success (e.g., relationship success, income, pro-motions, persuasiveness). They were told they would view photos of students who had all indicated their future career goals. They would view each photo along with two goal statements—one that belonged to that student and one that did not. Their task was to match the correct career goal with the student in the photo. They were randomly assigned to read either that the test was legitimate (i.e., *a reliable indicator of thin-slice social perceptiveness that predicts the previously mentioned outcomes*) or that it was not legitimate (i.e., *it was not a final version of the test, and its reliability and ability to predict outcomes was unknown*).

After the task, participants received either failure (3/12 correct) or success (11/12 correct) feedback. On the next page, they re-sponded to a manipulation check, "How well did you do on the test?" (1 = *very poorly*, 7 = *very well*), then completed an implicit theories measure containing social intelligence, general person, and intelligence theories. Participants then indicated how well they expected to perform if they took the test again (their expected score, 0–12 correct) and then asked how interested they would be in taking the task a second time at a later date via a binary yes/no item and an interest item ("How interested are you in taking the test again?"; 1 = *extremely uninterested*, 7 = *extremely inter-ested*). The implicit theory scale and the re-take willingness items were counterbalanced. Finally, participants indicated the score they remembered receiving on the test (0/12 – 12/12; an attention check) and reported demographic information (gender, age). Just

before debriefing, we again asked participants about their level of focus on the study.

Results

Premeasures. First, a 2 (feedback: success vs. failure) × 2 (legitimacy: unreliable vs. reliable) × 2 (counterbalance: implicit theory scale before or after willingness ratings) ANOVA on pre-measures of general person and intelligence lay theories generally showed no condition effects or interactions ($Fs > 2.6$, $ps > .105$). One interaction between counterbalance and legitimacy emerged for implicit theory of intelligence only, $F(1, 202) = 4.07$, $p = .045$. Given that all manipulations came after the premeasure, this interaction simply reflects imperfect random assignment; premea-sures were controlled in subsequent analyses.

Manipulation check. As expected, participants in the success condition ($M = 6.63$, $SD = .64$) reported that they did better on the test than those in the failure condition ($M = 1.56$, $SD = .85$), $F(1, 206) = 2403.14$, $p < .001$.

Implicit theories. Participants who received failure feedback that (ostensibly) legitimately reflected their abilities were expected to gravitate toward a more incremental theory of change, as changeability would open the door for a greater ability in future. In contrast, participants in the nonlegitimate condition were not ex-pected to shift, as they were already told the test was unreliable and would be able to easily dismiss any undesirable feedback. A 2 (feedback: success vs. failure) × 2 (legitimacy: unreliable vs. reliable) × 2 (counterbalance: implicit theory scale before or after willingness ratings) ANCOVA controlling for the combined pre-measure (three general person, one intelligence, $\alpha = .86$) was conducted on each of the three domains: social intelligence, gen-eral personality, and intelligence. The counterbalance (implicit theory scale before vs. after the interest item) revealed no main effects or interactions.

Social intelligence. The ANCOVA revealed a significant Feedback × Legitimacy interaction for social intelligence implicit theory, $F(1, 205) = 4.22$, $p = .041$, $\eta^2 = .02$ (see Figure 2). Within the nonlegitimate condition, there were no significant dif-ferences between those who received success feedback and those who received failure feedback. Within the legitimate condition,
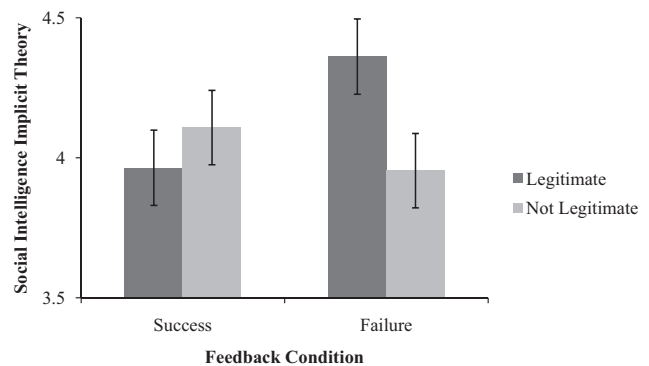

Figure 2. Participant social intelligence implicit theory scores, as a function of feedback and legitimacy conditions (Study 2). Higher numbers indicate a more incremental implicit theory. Means are adjusted for cova-riates. Error bars indicate the standard error of the mean.

participants who received failure feedback reported a significantly more incremental theory of social intelligence ($M = 4.36$, $SD = 1.07$) than those in the success condition ($M = 3.96$, $SD = 1.17$), $F(1, 205) = 4.38$, $p = .038$, $\eta^2 = .02$. Among participants who received failure feedback, those who were told the test was legitimate reported a significantly more incremental implicit theory than those who were told the test was not legitimate or reliable ($M = 3.96$, $SD = 1.27$), $F(1, 205) = 4.53$, $p = .034$, $\eta^2 = .02$.

General person and intelligence theories. General person theories did not reveal a reliable Legitimacy × Feedback interaction, $F(1, 205) = 2.73$, $p = .100$; *the pattern of means was similar to that of social intelligence, albeit weaker. As predicted, implicit theory of intelligence did not show the Legitimacy × Feedback interaction, $F(1, 205) = .26$, $p = .606$, or any other significant effects or interactions ($Fs < 2.3$, $ps > .130$).[1]

Next, we intend to test whether those who shifted more to an incremental theory after failure would be more optimistic about future performance and more willing to retake the test. First, we examine future expectation and retake willingness as dependent measures in the full study design. However, we had no specific predictions for how these measures would play out at a mean level—rather, we had specific expectations of how they would play out in a moderated mediation model in the failure condition.

Future expectations of performance. A 2 (feedback: success vs. failure) × 2 (legitimacy: unreliable vs. reliable) × 2 (counterbalance: implicit theory scale before or after willingness ratings) ANCOVA was conducted on the item "If you were to take the test again, how well do you think you would do?" (from 0/12 – 12/12 correct). There was a strong effect of feedback, $F(1, 206) = 185.76$, $p < .001$, $\eta^2 = .47$, such that those in the failure condition ($M = 6.58$, $SD = 1.79$) believed they would achieve a lower score in the future than those in the success condition ($M = 10.16$, $SD = 2.06$). Feedback condition did not interact with the legitimacy or counterbalance factors.

Interest in retaking the test. To obtain a measure of participant interest in retaking the test, we created the product of the binary retake item (yes = 1, no = 0) and the secondary interest item (1 = *extremely uninterested*; 7 = *extremely interested*) so that degree of interest was captured for those who said yes. A 2 (feedback: success vs. failure) × 2 (legitimacy: unreliable vs. reliable) × 2 (counterbalance: implicit theory scale before or after willingness ratings) ANOVA revealed no significant main effects or interactions ($Fs < 1.9$, $ps > .169$). Controlling for people's initial implicit theory of change did not alter the pattern of the effects.

Moderated mediation. At the study's outset, we predicted a multistep moderated mediation process: We hypothesized in the failure condition, greater threat (the legitimate test condition) would predict a more incremental implicit theory of social intelligence, which would in turn predict higher expectations of future performance, which would finally predict interest in retaking the test. That is, we only expected our predicted indirect effects to occur within the failure condition, in line with the motivational shifting seen in Figure 2. Zhao, Lynch, and Chen (2010) pointed out that a significant direct effect is not a requirement for testing mediation: "There need not be a significant zero-order effect of X on Y, r_{XY}, to establish mediation" (p. 199) and "One can imagine the authors giving the project up after failing to find an 'effect to be mediated.' They should persist" (p. 200). Moreover, the authors

noted that a lack of a direct effect can easily be due to suppression—for example, legitimate failure is of course disheartening, but shifting to a more incremental theory was expected to dull that negative effect. Thus, we proceeded to test our initial hypothesis of a moderated indirect effect.

The predicted moderated mediation model contained two mediators: Using AMOS Graphics 20.0 structural equation modeling software (Arbuckle, 2006), we entered legitimacy condition (Not Legitimate = 0; Legitimate = 1) as the independent variable, implicit theory of social intelligence as the first mediator, expected future performance as the second mediator, and interest in retaking the test as the dependent variable ($n = 213$ overall; $n = 106$ in the failure condition; $n = 107$ in the success condition; see Figure 3). The general person premeasure ($\alpha = .91$) was controlled.[2] The direct path from legitimacy condition to retake interest was set to zero. Model fit was excellent, $\chi^2(8) = 5.66$, $p = .685$, comparative fit index = 1.00, root-mean-square error of approximation = .00.

Failure condition. Legitimate failure predicted a more incremental theory of change, which predicted higher expectations of future performance, which predicted increased interest. There was a significant indirect effect of condition on future expectation through implicit theory of social intelligence ($b^* = .09$, $p = .010$). The indirect effect of implicit theory of social intelligence on retake interest was also significant ($b^* = .08$, $p = .008$). Finally, the overall indirect effect of condition on interest in retaking the test was marginally significant ($b^* = .08$, $p = .076$).

Success condition. We did not expect people to have much impetus to shift lay theories in the success condition (when people were not motivated by a threat to self-view). Consistent with predictions, no indirect effects were significant.

Discussion

Overall, we see that only when a test (and its feedback) is perceived as legitimate, failure feedback induces participants to shift their implicit theory to a more incremental perspective relative to success feedback. This provides context to the results of Study 1, which primarily showed resistance to an entity theory after failure, and more directly tests our hypothesis that these effects will only occur when sufficiently motivated. Further, we show in the failure condition only, shifting toward an incremental theory of social intelligence (the ostensible focus of the test) predict more optimistic future performance expectations and more

---

[1] As the task was novel, we ran a brief replication of the legitimacy conditions (i.e., success-failure feedback on an ostensibly credible test). In the initial study, we did not include a premeasure of social intelligence implicit theory (because we were not sure participants would know what the term meant). In the replication, we added a premeasure item defining and measuring lay theories of social intelligence (and included it as a covariate). Participants who received failure feedback reported significantly more incremental social intelligence implicit theory ($M = 4.11$, $SD = 1.20$) than those in the success condition ($M = 3.77$, $SD = 1.26$), $F(1, 184) = 8.43$, $p = .004$, $\eta^2 = .04$. In this study, participants who received failure feedback also endorsed a more incremental general person implicit theory ($M = 3.94$, $SD = 1.26$) than those in the success condition ($M = 3.73$, $SD = 1.33$), $F(1, 184) = 4.09$, $p = .045$, $\eta^2 = .02$. As expected, there was no significant effect of the manipulation on the unrelated domain of intelligence, $F(1, 184) = .091$, $p = .764$. The counterbalance again did not have a significant effect or interaction.

[2] Including the intelligence lay theory premeasure as well did not change the significance or pattern of effects.
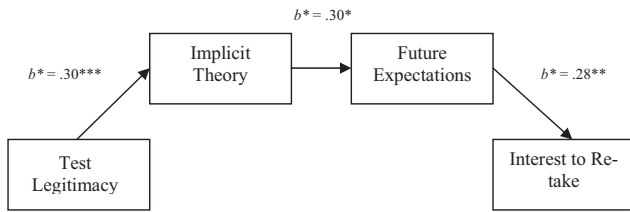
Figure 3. Path analysis using structural equation modeling (bootstrapping, 2,000 samples, 95% CI), Study 2, failure condition. Model fit was excellent. Legitimate failure had a significant and positive indirect effect on expectations of future performance, and a marginal positive indirect effect on interest in retaking the test. Legitimate failure predicted a more incremental theory of change, which predicted higher expectations of future performance, which predicted increased interest. * $p < .05$. ** $p < .01$. *** $p < .001$.

interest in retaking the test. This result supports our interpretation of Study 1's effects: Failure provokes movement toward an incremental theory, thus it is likely that participants in Study 1 were indeed resisting the undesirable entity manipulation after failure because an incremental theory would be more desirable.

Our overarching hypothesis is that people can strategically shift their implicit theory to help them support a desired conclusion or opinion. We do not claim that implicit theories are people's only "out" in threatening contexts (e.g., failure feedback) but that they can—and will—shift their implicit theories if the ability to change is salient. If participants had another "out" (like disregarding the legitimacy of the test), then they did not shift. However, it is notable that counterbalancing did not play a role—people appeared to be shifting somewhat spontaneously whether immediately presented with the measure or not. They showed the same patterns whether they shifted their theories first, or right after reporting willingness to retake.

In the following studies, we move away from present-moment success or failure to study contexts where change is naturally salient: considering a past self (have I changed since then?), considering the past actions of politicians (do their past actions matter?), and considering the past actions of a convicted felon (are they still dangerous?).

Study 3

Studies 1 and 2 suggest that people gravitate toward a particular implicit theory—and even resist information to the contrary—when it serves to protect a favorable self-view. Study 3 conceptually replicates Study 2 in a novel domain (social skills), using a valenced memory recall manipulation rather than false feedback. Autobiographical memory is another natural context where beliefs about change or stability should be very important: Past selves can reflect directly on a present self or be seen as distinct from the "new me" (Libby & Eibach, 2002; McFarland & Buehler, 2012). As in Study 2, we expected that a recent failure would be less threatening if people moved toward the implicit theory that suggests they can change (because they could improve their ability in the future). In the present study, we argue that recalling a past social failure will be less threatening if people invoke the belief that social ability is changeable. Past events have less power to taint present self-views when people believe they have changed

over time (Libby & Eibach, 2002); shifting toward an incremental implicit theory would support this perception. Conversely, if people believe their attributes are fixed over time, salient past events would have direct implications for current self-views (If I was a social success in the past, and I cannot change, I still am today).

Because we suggest that this is a motivated process intended to help people reach desired conclusions, we expected that if people do not have a vested interest in the conclusions they draw, they should have no inclination to selectively gravitate toward a particular implicit theory. Accordingly, we expected to observe implicit theory shifting when people contemplated negative events from their own past but not when they thought of the experiences of an acquaintance. Moreover, we again measured multiple implicit theory domains: personality, social skills, and morality. As in Study 2, we expected shifting within relevant domains (social skills and the broad domain of personality), but not within clearly unrelated domains (e.g., morality).

Method

Participants.   One hundred eight undergraduate students from a Canadian university participated in the study for course credit (70 women; $M_{age} = 18.46$, $SD = .91$; range = 18–22). In this and subsequent studies (except where otherwise noted), neither age nor gender significantly predicted or moderated relevant effects.

Exclusions.   Eleven participants were excluded for not recalling an appropriate memory (i.e., the memory was not social in nature, was a positive memory despite negative recall instructions, or was a personal memory despite acquaintance instructions). The final sample contained 97 participants (67 women; $M_{age} = 18.44$, $SD = .80$; range = 18–22).

Design and procedure.   Participants completed this study in paper-and-pencil format in individual lab sessions. The study was a 2 (valence: social success vs. failure) × 2 (memory type: personal vs. acquaintance) between-subjects design. Participants were prompted to recall and write about either a social success or failure from within the past 4 years for either themselves or an acquaintance. In the success condition, participants were asked to think about a time in which they (or an acquaintance) felt socially accepted, socially skilled, and/or popular. In the failure condition, participants were asked to think about a time in which they (or an acquaintance) felt socially rejected, alone, or socially awkward. Participants wrote a short paragraph about the recalled event and estimated the date (month and year) that it occurred. They were also asked to report "How did this event make you feel at the time?" (0 = *very badly*; 10 = *very good*).

Dependent measures.   Afterward, participants completed a nine-item implicit theories questionnaire (1 = *strongly disagree*; 6 = *strongly agree*) composed of three previously published general person theory items ("The kind of person someone is, is something basic about them and it can't be changed," $\alpha = .77$: Chiu, Hong, & Dweck, 1997), three morality theory items ("A person's moral character [e.g., honesty, trustworthiness] is something very basic about them and it can't be changed very much," $\alpha = .87$: Chiu, Dweck, Tong, & Fu, 1997), and three social items (e.g., "There is not much that can be done to change a person's social skills and popularity," $\alpha = .60$) created by the authors. Because people were asked to recall a *social* memory, we wanted to test whether people would shift their implicit theories specifi-

cally regarding sociability and social skill. We also thought it was likely that people's general person theories would shift. Because morality theories are further removed from the types of memories recalled, we expected these implicit theories would not be likely to shift. Items were recoded such that higher scores indicated a stronger endorsement of incremental theory.

Results

On average, participants reported an event that occurred 12.25 months in the past ($SD = 13.21$); elapsed time did not differ by condition ($Fs < 1.8$, $ps > .18$). Because people might perceive more change over long time spans, we controlled for date of the reported event in all analyses; however, results were the same with or without this covariate.

Manipulation check. As expected, social success memories ($M = 9.34$, $SD = .96$) were perceived as significantly more positive than failure memories ($M = 1.91$, $SD = 2.06$), $F(1, 90) = 551.10$, $p < .001$, $\eta^2 = .86$. Personal memories ($M = 6.28$, $SD = 3.83$) were also rated more positively than acquaintance memories ($M = 4.92$, $SD = 4.21$), $F(1, 90) = 6.68$, $p = .011$, $\eta^2 = .07$. These main effects were qualified by a marginal interaction, $F(1, 90) = 3.62$, $p = .060$, $\eta^2 = .04$, suggesting that participants recalled their own social failings as less negative ($M = 2.73$, $SD = 2.49$) than the failings of others ($M = 1.23$, $SD = 1.31$), $F(1, 90) = 8.99$, $p = .004$, though self and acquaintance successes were equally positive ($M = 9.42$, $SD = .96$; $M = 9.21$, $SD = .98$, respectively; $p > .600$). Despite some favoritism toward the self when recalling negative memories, it is clear that the valence manipulation was successful.

Implicit theories. We predicted that participants would report a more incremental person theory and social theory after recalling a personal failure than success. As expected, 2 (valence: success vs. failure) × 2 (memory type: personal vs. acquaintance) ANCOVAs controlling for memory date revealed a Valence × Memory Type interaction for social implicit theory, $F(1, 90) = 5.32$, $p = .023$, $\eta^2 = .06$, and for general person implicit theory, $F(1, 90) = 4.85$, $p = .030$, $\eta^2 = .05$. Supporting our domain-specificity account, implicit theories in the unrelated domain of morality did not show a significant interaction, $F(1, 90) = 1.75$, $p = .190$, $\eta^2 = .02$. Means, standard deviations, and simple effects results are indicated in Table 1.

Simple effects were computed for the two domains revealing interactions: social ability and general person implicit theories. Participants who recalled a negative personal memory reported a significantly more incremental general person implicit theory and a marginally more incremental social skill implicit theory than

those who recalled a positive personal memory. Additionally, those who recalled a negative personal memory reported a significantly more incremental social theory and a marginally more incremental person theory than those who thought of a negative memory involving an acquaintance.

Discussion

For both the general personality and social ability implicit theories, participants adopted a more incremental view of these domains after recalling a personal social failure rather than a success. They did not show this pattern when recalling acquaintance events, presumably because they were not motivated to regulate the conclusions they drew about acquaintances. In addition, self versus acquaintance effects emerged only after recalling a negative (but not positive) memory, suggesting that people are inclined to shift their theories toward greater malleability after encountering a threatening memory, whereas pleasant memories do not elicit significant shifting. Finally, note that implicit theories in the moral domain did not differ by condition, consistent with the findings of Study 2: It seems that people will only shift their theories in domains that are relevant to the conclusions they hope to draw. In the present study, participants reacted within general domains (the "kind of person" one is) and specific ones (the social domain) but excluded a specific domain that did not pertain to the situation (morality).

Study 4

So far, we have demonstrated that people may shift their endorsement of implicit theories in ways that help them to reach desired conclusions about the self (or avoid undesirable conclusions). By selecting an incremental lens through which they can interpret evidence of failure as changeable, people can protect their self-concepts from concerns that their shortcomings will endure. However, people are not only motivated to regulate their views about the self—they are often inclined to reach particular conclusions about others (e.g., Morgan, Mullen, & Skitka, 2010). In Studies 4, 5, and 6, we extend our investigation to include important others. We work through (and test) the assumption that individuals who affiliate with a particular political party are motivated to view their own party's candidate favorably, and are motivated to view opposing parties' candidates unfavorably. When evaluating current political candidates, voters often have to sift through a great deal of information about their recent and distant past performance, and have to decide which evidence is pertinent to their current judgments of candidates. For example, "attack ads" dredge

Table 1

Study 3: Means, Standard Deviations, and Simple Effects for Main Analysis, Evaluating How Memory Valence and Target (Self vs. Other) Affect Perceptions of Changeability for Personality and Social Skills

Variable	Positive	Social Negative	Comparison	Positive	General Negative	Comparison
Personal	3.89 (.95)	4.39 (.96)	$p = .058$	3.02 (1.12)	3.80 (1.34)	$p = .016$
Acquaint.	4.12 (1.04)	3.80 (.91)	ns	3.41 (1.11)	3.31 (1.12)	ns
Comparison	ns	$p = .016$		ns	$p = .060$	

Note. Acquaint. = Acquaintance. Standard deviations are in parentheses.

up misdeeds from a candidate's often distant past with the hope that these will be considered a lasting mark on that candidate's character. However, long-past foibles can just as easily be dismissed as irrelevant. Should a candidate's past political missteps, past drug use, or marital infidelity, and other earlier regrettable actions be considered when judging current and future performance? There is no clear-cut answer to this question: Evidence is often ambiguous and will be colored by the lens through which it is interpreted. In Studies 4–6, we examine how people might adopt particular implicit theories to help them interpret political pasts in a manner consistent with the conclusions they wish to draw about a candidate.

Study 4 was conducted in Canada within weeks of the last Federal election (2011). Participants were randomly assigned to read unflattering quotations from either the Liberal or Conservative party leaders. We used real statements uttered by candidates an average of 10 years ago, many of which were actively being used as ammunition in the media. We predicted that when people read damaging quotes attributed to their favored candidate, they would shift their dominant implicit theory of the candidate in the incremental direction. In contrast, we expected people would be more likely to invoke an entity implicit theory (at their core, this person does not change) when reading the regrettable statements made by the opposing party's candidate. We have suggested that shifting implicit theories helps people to reach desired conclusions. To examine the downstream effects of implicit theories, we also asked participants how relevant past statements were to candidates' current standing. We expected that people would deem a candidate's past verbal missteps as more irrelevant to the extent that they adopted a more incremental implicit theory.

Method

Participants. Two hundred twenty-six participants were recruited from local farmers' markets in Southern Ontario, Canada (116 women, four undisclosed; $M_{age} = 43.55$, $SD = 15.36$), within the 2 weeks before the last Canadian federal election. Participants were offered a large candy bar as compensation.

Participant inclusion/exclusion. We excluded any participant who skipped more than half the questionnaire, leaving the main questions blank (13 participants). Because we were examining only the two largest of Canada's four prominent federal parties (Liberals and Conservatives), we determined a priori to exclude the two smallest parties (New Democrats Party [NDP] and Green), who would not review their candidate. This removed 87 additional participants up front, although we did run the main analyses with them included.[3] Thus, 126 participants were used in the final analyses (66 women, two undisclosed; $M_{age} = 45.61$, $SD = 15.75$; 64 Liberals, 62 Conservatives).

Procedure. Participants were invited to participate in a survey on voting in Canada. Those who agreed were given a clipboard and space to privately respond to the questionnaire. First, participants were asked to indicate the party they would vote for if the election were held at that very moment. Participants were then assigned to one of two conditions: They either read five personally unflattering statements made by the Liberal or the Conservative party leader (Michael Ignatieff and Stephen Harper, respectively) in the relatively distant past (5–15 years earlier with an average of 10 years). We included only the leaders of the two parties (Liberal and

Conservative) who have traditionally been the main contenders for Federal leadership in Canada.

Premeasures. Participants reported demographic information, past voting behavior, and who they would vote for in the current election. In addition, embedded in the premeasure, we included a single item assessing participants' initial implicit theory of change regarding politicians in general—"Political candidates can do things differently now, but the important parts of who they are can't really be changed" ($1 = strongly\ disagree$; $6 = strongly\ agree$).

Experimental manipulation. Participants were randomly assigned to read a series of unflattering statements made by either from the Liberal or the Conservative party leader (see the Appendix). Although statements differed considerably by candidate, they reflected the issues raised during the election campaign: that the Liberal candidate was uncommitted to Canada and that the Conservative candidate was cold and unempathetic.

Dependent measures. After reading the five past quotations from either the Liberal or the Conservative leader, participants rated them from -3 (*very negative*) to $+3$ (*very positive*). Participants then completed a four-item implicit theories scale (Dweck, 1999) adapted to the specific candidate they read about. For example, "Mr. Ignatieff [Mr. Harper] can do things differently now, but the important parts of who he is can't really be changed" ($1 = strongly\ disagree$; $6 = strongly\ agree$). As before, scores were recoded so that higher numbers indicated a more incremental theory. Participants were also asked to report the degree to which they thought candidates' past utterances should be considered relevant to their current standing: "Do you believe that these statements should affect Mr. Ignatieff's [Mr. Harper's] current standing in the public eye?" ($1 = not\ at\ all$; $7 = very\ much$).

Results

Participants were included in the present analyses if they intended to vote either Liberal ($n = 64$) or Conservative ($n = 62$). This allowed us to examine voters who could clearly be considered *supporters* or *opponents* of the featured candidates (voters planning to support another party were conceivably more ambiguous in their support for or opposition to the two "frontrunners").

Quotation ratings. First we wanted to ensure that voters judged the candidates' statements to be undesirable. Voters affil-

---

[3] Notably, we failed to predict the unprecedented gains of a third party, the New Democrats (NDP); hence, we excluded a larger number of supporters for this party than anticipated. If these other voters are included ($n = 87$) as a third voting bloc (the far-left NDP and Green parties together; they did not differ on any variables of interest), the interaction is still significant, $F(2, 202) = 18.15$, $p < .001$, $\eta^2 = .15$. The results of central interest did not differ from those reported in the text: Examination of the simple effects revealed that these "third" party supporters behaved like opponents to both the Liberal and Conservative candidates—which they were. That is, when considering the Liberal candidate, they reported a theory of change ($M = 3.17$, $SD = 1.20$) identical to Conservative voters ($M = 2.80$, $SD = 1.07$; contrast $p = .161$) and significantly less incremental than Liberal voters ($M = 4.10$, $SD = 1.02$; contrast $p < .001$). Conversely, when considering the Conservative candidate, they reported an implicit theory of change ($M = 2.33$, $SD = 1.04$) identical to Liberal voters ($M = 2.45$, $SD = 1.23$; contrast $p = .631$) and significantly less incremental than Conservative voters ($M = 3.45$, $SD = 1.10$; contrast $p < .001$). In other words, they reported an entity theory of change for both candidates, presumably so the negative pasts would "stick."

iated with both parties judged both leaders' quotations as significantly more negative than the midpoint (0) of the scale (all ts < -17.00, all ps $< .001$; see Table 2 for means, standard deviations, and t tests). Regardless of their own political affiliation, participants agreed that the statements were unflattering to candidates. Not surprisingly, a Voter (Liberal vs. Conservative) $\times$ Candidate (Liberal vs. Conservative) interaction, $F(1, 122) = 26.58$, $p < .001$, indicated that respondents viewed their preferred candidate's statements as less damning than their opponent's: Conservatives, $F(1, 122) = 24.41$, $p < .001$; Liberals, $F(1, 122) = 5.08$, $p = .025$. This party allegiance effect is likely unavoidable when using real statements by individuals on either side of the political spectrum. However, what is most important is that respondents considered the quotes to be unflattering (rather than laudable) for both candidates. Notably, controlling for statement valence did not alter any of the results.

Implicit theories premeasure. A Voter (Liberal vs. Conservative) $\times$ Candidate (Liberal vs. Conservative) ANOVA on the single-item preliminary measure of implicit theories about politicians at the study outset revealed no main effects or interactions (Fs < 1.47, ps $> .229$).

Main analyses. Next, we examined whether participants' implicit theories about political candidates would differ depending on their affiliation as voters and whether they read unflattering statements made by their preferred candidate or the opponent. A 2 (candidate condition: Liberal vs. Conservative) $\times$ 2 (voter: Liberal vs. Conservative) analysis of covariance (ANCOVA; with the implicit theories premeasure as a covariate) revealed a significant Candidate Condition $\times$ Voter interaction, $F(1, 118) = 34.79$, $p < .001$, $\eta^2 = .23$ (see Figure 4).

Analyses of simple effects revealed that Liberal voters were significantly more incremental in their views regarding the Liberal than the Conservative candidate, $F(1, 118) = 34.78$, $p < .001$. Conservative voters were significantly more incremental in their views regarding the Conservative than the Liberal candidate, $F(1, 118) = 6.29$, $p = .013$. Examined another way, among participants who read unflattering statements by the Conservative candidate, Conservative voters supported the candidate's capacity to change more than did Liberal voters, $F(1, 118) = 12.59$, $p < .001$. In contrast, after reading about the Liberal candidate's gaffes, Conservative voters invoked a significantly more entity theory than Liberal voters, $F(1, 118) = 24.36$, $p < .001$.

Relevance of past statements to current standing. When voters are faced with unfavorable information about a candidate's past, they are compelled to weigh the relevance of that past in their current appraisals of the candidate's standing. We argue that people might gravitate toward the implicit theory that allows them
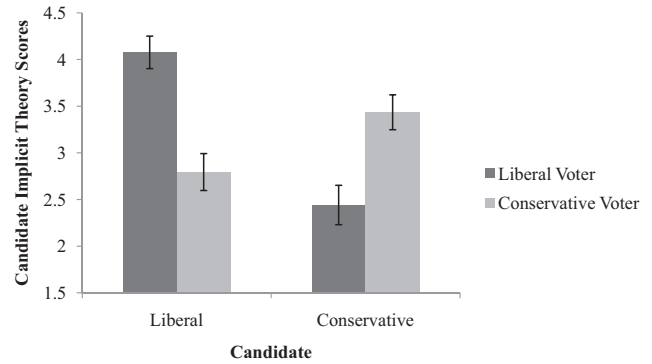
Table 2
Study 4: Quotation Valence by Condition and Party Affiliation (Testing for Difference From the Neutral Midpoint of 0)

Party affiliation	Candidate	t test	M (SD)
Conservative (Con)	Con (Harper)	$t(31) = -3.09$, $p = .004$	$-.78$ (1.43)
	Lib (Ignatieff)	$t(29) = -7.02$, $p < .001$	-1.87 (1.46)
Liberal (Lib)	Harper	$t(25) = -15.47$, $p < .001$	-2.46 (.81)
	Ignatieff	$t(37) = -5.56$, $p < .001$	-1.16 (1.29)

Figure 4. Candidate implicit theory scores as a function of condition and political affiliation (Study 4). Higher numbers indicate more changeability (incremental theory). Means are adjusted for covariates. Error bars indicate the standard error of the mean.

to either dismiss past misdemeanors as irrelevant to current political concerns or hold onto past misdeeds as lasting marks of character (depending on whether they want to support or discredit the candidate). To examine this mediation hypothesis, we first examine voters' assessment of the quotations' relevance to the current election, then assess whether differences in relevance are accounted for by implicit theory endorsement. The expected Voter $\times$ Candidate interaction emerged, $F(1, 122) = 59.79$, $p < .001$, $\eta^2 = .33$. Main effects of voter, $F(1, 122) = 1.44$, $p = .232$, and candidate, $F(1, 122) = 1.03$, $p = .312$, were nonsignificant. Simple effects revealed that voters deemed their favored candidate's statements to be less pertinent to current standing ($M_{conservative\ candidate} = 3.59$, $SD = 1.97$; $M_{liberal\ candidate} = 2.92$, $SD = 1.60$) than they judged their opponents' past statements to be ($M_{conservative\ candidate} = 5.58$, $SD = 1.50$; $M_{liberal\ candidate} = 5.63$, $SD = 1.63$), Fs(1, 122) > 19.79, ps $< .001$.

Mediation analysis. We have shown that participants selectively endorsed the candidate implicit theory that allows them to support desired conclusions—that opposing candidates are at core unchangeable while their favored candidate *can* change. We predict that this differential implicit theory endorsement might underlie the tendency to discount unflattering information about favored candidate (because they are so changeable) but to view their (unchanging) opponent's past statements as still pertinent to their current standing in the polls. A mediation analysis was conducted ($n = 123$) via bootstrapping using the method outlined by Preacher and Hayes (2008). The Condition $\times$ Voter interaction term was entered as the independent variable (controlling main effects and initial politician implicit theory), candidate implicit theory was entered as the mediator, and participant ratings of how much the negative quotes should affect a candidate's current standing in the election were entered as the dependent variable (see Figure 5). Bootstrapping (1,000 samples, 95% CIs) revealed a significant indirect effect, CI [.90, 2.74], $p < .05$, suggesting that some of the effect of the interaction occurs through implicit theories of a candidate's malleability. The alternate model in which judgments about the negative quotations' relevance acted as the mediator, and implicit theory acted as the outcome, was also significant, CI [-1.98, $-.79$], $p < .05$. Althoughplausible—voters' wish to have the quotes be relevant could have influenced their judgments of
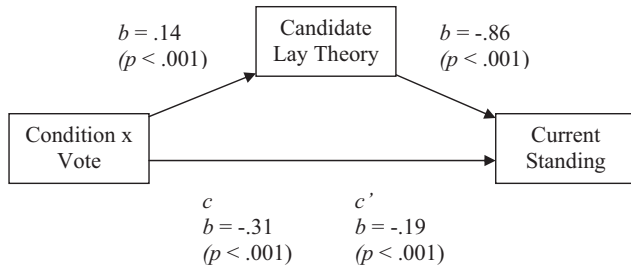
Figure 5. Study 4. Path analysis demonstrating that candidate lay theory partially mediates the effect of candidate (Harper or Ignatieff) by voter affiliation (Conservative or Liberal) on judgments of how much negative past quotes should affect a candidate's current standing in the national election.

changeability—we chose voter implicit theory as the mediator because (a) implicit theories were reported immediately after voters read the quotations and (b) the direct effect was still significant after the inclusion of implicit theories—political bias was still enacting a powerful effect on relevance.

Discussion

Studies 1–3 demonstrated how people may shift their dominant implicit theory to reach desired conclusions about the self. Study 4 extends this to assessments of important others: political candidates who one cares about supporting or opposing. Voters confront a great deal of information about political candidates coming up to an election and must decide what facts to weigh as pertinent or irrelevant to their assessment of candidates' current character. The results of Study 4 demonstrate that people do this in a far from even-handed manner and may recruit implicit theories that help support their contention that decade-old unflattering utterances either are central to a candidate's current standing or are simply irrelevant to the decision at hand.

Of course, one limitation to Study 4 is that participants were exposed to solely negative information about candidates, which does not allow us to determine the causal effect of the valence of past information. Although the mediational analyses lend support to our contention that participants shifted their implicit theories to either deflect or compound the impact of damaging past statements (because implicit theories mediated current judgments of statement relevance), it is possible that voters held an implicit theory specific to each candidate coming into the study (even though they did not differ on their implicit theories of politicians in general); each candidate may have been a "domain of their own" for each participant.

In Study 5, we sought to replicate and extend Study 4 by including an experimental manipulation of the valence of a political past. In this way, we can determine whether voters of same political leaning actually endorse different implicit theories when evaluating the same candidate, depending on the way the candidate's past is described, thereby addressing the ambiguity of Study 4. Further, rather than relying on actual past events, we created fabricated favorable or unfavorable records of actions for the same time period (Barack Obama's time in the Senate). We sacrifice some ecological validity in favor of increased experimental control (reversing the balance in Study 4).

Study 5

We presented participants with a positive or a negative representation of Barack Obama's time as senator (during 2005–2008). As in Study 4, we hypothesized that in the negative past condition, Republican participants would endorse an entity view of President Obama (i.e., that he cannot really change), whereas Democrats would endorse a more incremental view of President Obama (i.e., that he is malleable). Consistent with Studies 1–3, we did not expect any significant differences between Republicans and Democrats in the positive condition, because neither malleability nor stability poses an inherent challenge to a favorable past record: An entity theory suggests the candidate will continue to be successful, and an incremental theory allows the candidate to improve (or decline).

Additionally, it is important to note the difference in context between Study 4 and Study 5. In Study 4, the election was in full swing, and all politicians were candidates—no one was incumbent and "safe" from losing their position. In contrast, Study 5 was conducted outside of the election cycle. There was an incumbent (Obama) who is not threatened within an election campaign. Thus, we expected that any observed effects would be stronger among Republicans, as the Democratic President Obama (the focus on the study) was safer from any damaging effects than the candidates in Study 4.

Method

Participants.   Two hundred fifty American residents recruited from Amazon's Mechanical Turk participated in our online study in exchange for $0.40 dollars (148 females, two undisclosed).

Participant inclusion/exclusion.   We excluded six participants who failed an attention check. Additionally, in Study 5 we aimed to examine Democrats and Republicans as clear "supporters" and "opponents" of Obama (respectively). Participants reported their political affiliation at the study outset. Those who reported a party affiliation other than Democrat or Republican ($n = 37$) were excluded a priori. In addition, similar to Morgan et al. (2010), we took into account strength of party affiliation (1 = *not strongly associated*; 7 = *very strongly associated*). Unlike Study 4, which was conducted with an election fast approaching, Study 5 was conducted between electoral cycles; hence, we sought to identify highly disengaged voters. We identified participants who selected a party affiliation (Democrat or Republican) but selected the lowest possible value (1) for strength of affiliation, or did not indicate affiliation at all. This group of 32 participants was excluded from all analyses. Analyses were conducted on 212 participants (109 women; 120 Democrats, 67 Republicans; $M_{age} = 37.75$, range = 19–73).

Procedure.   Participants first reported demographics, political orientation measures (i.e., "If a federal election were held tomorrow, which political party would you vote for?"), and strength of affiliation. Embedded in this section was one general person implicit theory premeasure and one implicit theory item specific to Obama: "People [President Obama] can do things differently now, but the important parts of who they are [he is] cannot be changed" (1 = *strongly disagree*; 7 = *strongly agree*).

Experimental manipulation.   Participants were randomly assigned to read either a negative or a positive representation of Barack Obama's time as Senator (2005–2008). Appraisals were

described as the result of a bipartisan review (of all senators 2005–2008) with "strikingly high" Republican-Democrat consensus. In the positive condition, participants read that the committee concluded that "Barack Obama was often successful in his efforts . . . and that his behavior was consistent with his core goals: the support of working families and the betterment of America." His summary "grade" was an "A." In the negative condition, participants read that the committee concluded that "Barack Obama was often ineffectual in his efforts . . . and that his behavior often fell far short of his core goals. Rather, his actions often led to an increase in the unfair powers of big industry and the mega-rich." His summary grade was a "C−."

Dependent measures. After reading the bipartisan review, participants rated on a scale ranging from −3 (*very negative*) to 0 (*neither positive nor negative*) to + 3 (*very positive*) their overall evaluation of Obama's Senate record. As in Study 4, participants then completed a modified version of the Dweck (1999) general person implicit theory scale, which asked participants to indicate the degree to which they felt Barack Obama was changeable or stable. After this, we also had participants complete the original general personal implicit theory scale. Finally, participants responded to the question, "Some would say that a politician's past deeds are an indication of current views and others would say they are irrelevant. How much do you think Obama's track record as Senator reflects his *current views*?" (1 = *not at all representative*; 7 = *very much representative*).

Results and Discussion

Preliminary analysis.

Implicit theories premeasure. Prior to the manipulation, Democrats endorsed a more incremental initial implicit theory both in general ($M = 3.26$, $SD = 1.38$) and with respect to Obama ($M = 3.08$, $SD = 1.37$) than did Republicans ($M = 2.69$, $SD = 1.22$; $M = 2.04$, $SD = 1.16$, respectively); $F_{general}(1, 182) = 26.92$, $p < .001$, $\eta^2 = .13$; $F_{Obama}(1, 179) = 7.78$, $p = .006$, $\eta^2 = .04$. We control for this variability in our main analysis. Importantly, there were no premanipulation differences between the negative and positive conditions for the general person implicit theory premeasure, $F(1, 179) = .04$, $p = .846$, or the Obama implicit theory premeasure, $F(1, 182) = .02$, $p = .885$.

Manipulation check. A 2 (condition: negative vs. positive) × 2 (voter: Democrat vs. Republican) ANOVA on participants' evaluations of Obama's Senate record confirmed that his record was viewed more favorably by those who read the positive bipartisan review ($M = 5.61$, $SD = 1.50$) than by those who read the poor review ($M = 3.14$, $SD = 1.78$), $F(1, 183) = 150.03$, $p < .001$, $\eta^2 = .45$. Not surprisingly, Democrats rated his record more positively overall ($M = 5.14$, $SD = 1.74$) than Republicans ($M = 3.13$, $SD = 1.93$), $F(1, 183) = 92.82$, $p < .001$, $\eta^2 = .34$. Importantly, the interaction was not significant ($p = .196$), hence voters from both parties were affected by the manipulation even if their average assessment was also informed by party allegiance.

Candidate implicit theory. We predicted that, after reading an *unfavorable* review of his past Senate record, Republicans would endorse an entity theory for President Obama (i.e., that he cannot change), whereas Democrats would endorse a more incremental perspective (i.e., that he is changeable). A 2 (condition: negative vs. positive) × 2 (voter: Democrat vs. Republican) ANCOVA on

participants' implicit theories for Barack Obama, controlling for initial implicit theories, revealed the expected interaction, $F(1, 175) = 4.06$, $p = .045$, $\eta^2 = .02$. Simple effects revealed that after reading about a poor Senate record, Republicans rated Barack Obama as significantly more fixed and unchangeable than did Democrats, $F(1, 175) = 5.75$, $p = .018$, and significantly more than did Republicans who read about a good Senate record, $F(1, 175) = 5.85$, $p = .017$ (see Figure 6). In the positive condition, Democrats and Republicans did not differ in their implicit theories of Obama, $F(1, 175) = .17$, $p = .711$.

General person implicit theory. A 2 (condition: negative vs. positive) × 2 (voter: Democrat vs. Republican) ANCOVA with general person implicit theories as the dependent variable, controlling for the general person premeasure, did not reveal a Condition × Voter interaction, $F(1, 176) = .31$, $p = .577$.

Relevance to present. As in Study 4, voters in the present study must decide how much relevance to give to Obama's past political record in their current judgments of him. A 2 (condition) × 2 (voter) ANCOVA revealed a significant interaction, $F(1, 174) = 32.82$, $p < .001$, $\eta^2 = .16$; both main effects were nonsignificant ($ps > .770$). Simple effects revealed that Republicans in the Senate failure condition reported that Barack Obama's past performance reflected his current views much more than did Democrats, $F(1, 174) = 14.70$, $p < .001$, and more than did Republicans in the positive condition, $F(1, 174) = 13.71$, $p < .001$ (see Figure 7). Within the positive condition, Democrats indicated that Obama's performance reflected more of his present views than did Republicans, $F(1, 174) = 10.69$, $p < .001$, and Democrats in the negative condition, $F(1, 174) = 19.36$, $p < .001$.

Mediation analysis. As in Study 4, we contend that voters' assessments of the relevance of Obama's political past will be partly accounted for by their implicit theory endorsement. A mediation analysis (see Figure 8) was conducted ($n = 179$) via bootstrapping using the method outlined by Preacher and Hayes (2008). The Condition × Voter interaction term was entered as the independent variable (controlling for main effects and the implicit theory premeasures), reported implicit theory about President Obama was entered as the mediator, and participant ratings of relevance of Senate record to current standing was entered as the
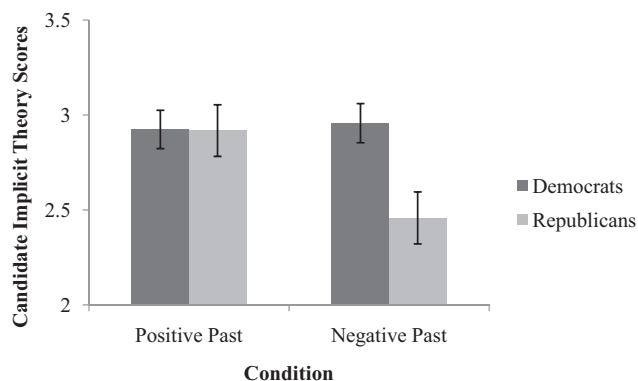

Figure 6. Implicit theories of Barack Obama as a function of condition and political affiliation (Study 5). Higher numbers indicate greater changeability (incremental theory). Means are adjusted for covariates. Error bars indicate the standard error of the mean.
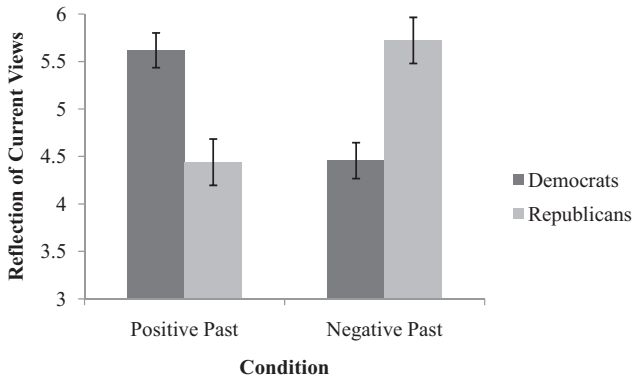
Figure 7. Participant ratings of how much Barack Obama's Senate performance reflects his current state, as a function of condition and political affiliation (Study 5). Higher numbers indicate that past performance is more representative of current standing. Means are adjusted for covariates. Error bars indicate the standard error of the mean.

dependent variable. Bootstrapping (1,000 samples, 95% CIs) revealed a significant indirect effect, CI $[-.27, -.02]$, $p < .05$, suggesting that some of the effect of the interaction on the perceived relevance of Obama's Senatorial performance occurs through judgments of Obama's changeability. As in Study 4, the alternate model wherein the "current views" item acts as mediator, and the implicit theory acts as the outcome, was also significant, CI $[-.63, -.10]$. The logic behind our preferred model is the same: we argue that voters start with a generalized motivation to "harm the opposing candidate" or "support my candidate"—and then shift their implicit theory to accommodate that desire; the "current views" item is the eventual supported conclusion. As before, the alternate model is of course plausible, where the "current views" item is the desired conclusion, and one's implicit theory is shifted to support it. In either case, we argue the process is that of motivated reasoning.

Discussion

Overall, these findings replicate and extend the findings from Study 4, suggesting that implicit theories can be strategically used to suit evaluative motives, not only for the self but also for important others. The data demonstrate a reliable relative difference between the implicit theories of Obama endorsed by his supporters versus opponents—but only after reading about his past failings. Indeed, it appeared to be opponents who drove this effect by gravitating toward an entity theory to enhance the relevance of his negative past. Obama supporters were quite incremental across both conditions; it may be that they saw Obama as changeable from the outset so had no additional need to shift their implicit theories further. Though we have more clearly demonstrated shifting in Study 5, we again primarily measured implicit theory specific to the politician in question. Though we did include general person implicit theory as a secondary measure, it was unaffected by condition. This could be because participants would only ever shift their theories of the candidate themselves. Instead, we suspect that general person theory was unaffected because participants were already able to garner the support they needed to reach their desired conclusion on the initial candidate-specific

scale (Tesser, 2001). Given this ambiguity, in Study 6 we only use the general person implicit theory scale to better test whether people might shift their more general implicit theories if this is the opportunity they are given to support their desired conclusion. Further, we move to support our motivated account by including a neutral condition in which participants consider a candidate they are not biased for or against. We expected that those reading about a neutral candidate (from another country) would not shift their implicit theories in response to valenced information.

Study 6

Similar to Study 4, Study 6 was also conducted in Canada. This study was conducted to clear up a couple of limitations from the previous study. First, rather than the candidate-specific versions used in Studies 4 and 5, we returned to the general person implicit theories scale. This more directly tests whether people might adjust their general implicit theories to support a desired conclusion about a candidate. Second, we wanted to further test our contention that people shift their implicit theories when sufficiently motivated. To examine this motivated reasoning account, we added a neutral control candidate: Canadian voters read about Tony Abbott—a political leader from Australia—about whom Canadians were expected to know little and care less.

Participants were randomly assigned to read either a negative or a positive performance review from 5 years ago. We predicted that when people read a damaging performance review, supporters would endorse a more incremental implicit theory than would opponents. The neutral condition was expected to fall somewhere between the two motivated groups.

Method

Participants. Participants were recruited from (a) a local farmers' market, (b) Canadian political discussion boards on the Internet, and (c) Mechanical Turk (selecting for Canadian residents). Because we were examining motivated shifts in implicit theories, we determined a priori to include only those participants who indicated an *in favor* or *opposed* party affiliation on the two central parties represented in our study (Liberal and Conservative). Thus, we did not examine participants who indicated they would vote for another Canadian party (i.e., Green and NDP voters; $n_{green} = 27$, $n_{NDP} = 49$, $n_{missing} = 3$). In total, 208 eligible
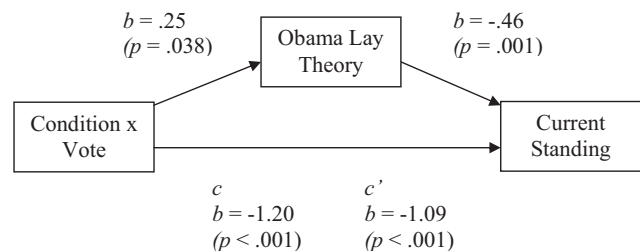

Figure 8. Study 5. Path analysis demonstrating that one's lay theory of President Obama's changeability partially mediates the effect of condition (positive or negative evaluation) by vote (Republican or Democrat) on judgments of how much Obama's performance as Senator should affect his current standing in the national election.

Canadian participants completed the survey (market: 76, discussion boards: 108, Mechanical Turk: 24).

Participant exclusion. Similar to Morgan et al. (2010), we took into account strength of party affiliation and excluded participants who indicated that they *do not affiliate* with their preferred party at all (23 participants). Finally, 21 participants failed the manipulation check. Thus, 164 participants were used in the final analyses (121 men, 42 women, one undisclosed; M_{age} = 34.15, SD = 13.26).

Procedure. Participants were invited to participate in a survey on voting strategies in Canada. Market participants completed a pen-and-paper survey. Internet participants completed the identical survey online.

Premeasures. First, participants indicated the party they would vote for if an election were held today. Along with demographic and filler items, participants reported their general person implicit theory on a single premeasure item: "People can do things differently sometimes, but the important parts of who people are can't really be changed" (1 = *strongly disagree*; 6 = *strongly agree*).

Experimental manipulation. The experimental design was a 2 (valence: negative vs. positive) × 3 (political party: Liberal vs. Conservative vs. neutral) between-subjects design. Participants read either a *negative* or a *positive* Independent Performance Review of one of three political party leaders: (a) the Liberal leader in Canada (Justin Trudeau), (b) the Conservative leader in Canada (Stephen Harper), or (c) neutral: the "Labor leader" in Australia (Tony Abbott); (Abbott is actually the head of a right-wing Liberal party, but to avoid erroneous comparison with Canadian left-wing Liberals, we relabeled him *Labor party*—no participants knew his actual party). The *negative* reviews indicated that an independent Parliamentary Performance Review Committee report was *critical* of [party leader]'s performance in 2008, giving [party leader] a "C" grade for the year 2008. The *positive* reviews indicated that the report *praised* [party leader]'s performance in 2008, giving [party leader] an "A" grade for the year 2008.

Dependent measures. After reading the performance review, participants rated the reviews from −3 (*very negative*) to +3 (*very positive*). Participants then completed a three-item general person implicit theories scale (Dweck, 1999). Higher numbers indicated a more incremental theory. Finally, participants were asked to report the degree to which they thought the performance review represents the party leader's current character (1 = *not at all*; 7 = *very much*).

Results

As in Study 4, participants were included in the present analysis if they intended to vote either Liberal or Conservative and indicated some degree of party affiliation with either the Liberal or Conservative party. This allowed us to examine voters who could clearly be considered motivated *supporters* or *opponents* of the featured candidates. Due to the small number of participants in some cells when split into all parties (primarily due to difficulty in recruiting enough conservatives), voters were grouped into three categories for the remainder of the analyses: in *favor* (i.e., Liberal voters in the Liberal candidate condition and Conservative voters in the Conservative candidate condition), *opposing* (e.g., Conser-

vative voters in the Liberal candidate condition and Liberal voters in the Conservative candidate condition), and *neutral* (e.g., both types of voters in the Abbott/neutral condition).

Manipulation check. Regardless of their own political affiliation, participants agreed that the negative performance reviews were unflattering to the candidates. Voters judged all of the leaders' performance reviews as significantly more negative (M = −1.29, SD = .86) than the midpoint (0) of the scale in the negative condition, $t(79)$ = −8.13, p < .001, and significantly more positive (M = 1.70, SD = 1.06) than the midpoint of the scale in the positive condition, $t(83)$ = 18.97, p < .001.

Implicit theories premeasure. A Voter (supporter vs. opponent vs. neutral) × Valence (negative vs. positive) ANOVA on the premeasure of general person implicit theories revealed no main effects or interactions (Fs < .672, ps > .414).

Main analyses. As in previous studies, our main interest was the implicit theory shift when under threat, thus we tested whether supporters would be more incremental than opponents after reading a negative review. A 2 (valence: negative vs. positive) × 3 (voter: supporter vs. opponent vs. neutral) ANCOVA (with the implicit theories premeasure as a covariate) revealed a significant Valence × Voter interaction; $F(2, 156)$ = 3.50, p = .033, η^2 = .04 (see Figure 9). Neither the main effect of valence, $F(1, 156)$ = 1.74, p = .189, nor voter, $F(2, 156)$ = .227, p = .797, emerged.

Within the negative condition, supporters reported a significantly more incremental general person theory of change than those opposed, $F(2, 156)$ = 5.63, p = .018, η^2 = .04, and, consistent with the motivated reasoning account, supporters were also marginally more incremental than voters not connected to the party leader (i.e., in the neutral condition), $F(2, 156)$ = 3.40, p = .068. Those opposed did not differ from those in the neutral condition (p = .441). Within opponents, participants who read a negative performance review endorsed a significantly more entity theory of change than those who read a positive review, $F(1, 156)$ = 8.11, p = .005, η^2 = .05. There was no significant difference between the performance reviews among supporters or neutral participants.

Relevance of past performance review on current character appraisals. As in Study 5, we were interested in whether participants felt that the past performance review represents the party
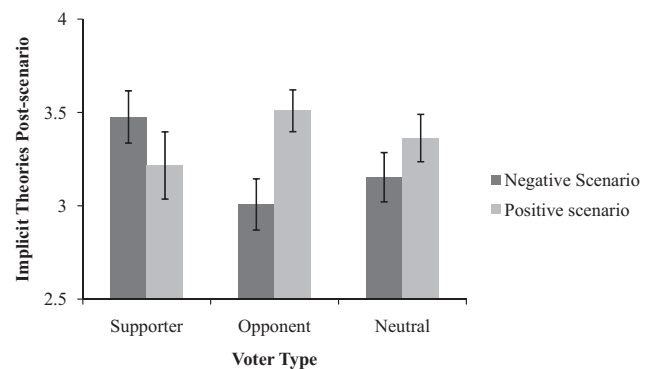

Figure 9. Implicit theory ratings postscenario (adjusted for implicit theory premeasure), as a function of condition (negative vs. positive) and political affiliation (supporter vs. opponent vs. neutral) (Study 6). Higher numbers indicate the incremental perspective. Error bars indicate the standard error of the mean.

leaders' current character. We predict that a differential lay theory endorsement might underlie a tendency to discount a negative history about favored party leaders (as they are changeable) but to view an (unchanging) opponent's negative history as a stable reflection of their current character. To examine this mediation hypothesis, we first examined voters' (supporters and opponents only) assessments of the relevance of the past performance review on the party leaders' current character. A 2 (valence: negative vs. positive) × 2 (voter: supporter vs. opponent) ANCOVA (with the implicit theories premeasure as a covariate) revealed the expected Valence × Voter interaction, $F(1, 99) = 21.67$, $p < .001$, $\eta^2 = .18$. Neither of the main effects were significant ($Fs < .18$, $ps > .67$). Simple effects revealed that voters deemed their favored party leaders' negative past performance to be less pertinent to current standing than an opponent's negative past ($M_{supporter} = 3.37$, $SD = 1.29$; $M_{opponent} = 4.85$, $SD = 1.67$), and their favored leaders' positive past was deemed more important to current character than an opponent's positive past ($M_{supporter} = 4.90$, $SD = .73$; $M_{opponent} = 3.58$, $SD = 1.66$), $Fs(1, 99) > 19.79$, $ps < .004$.

Mediation analysis. As in Studies 4 and 5, a mediation analysis was conducted including the opponent and supporter groups ($n = 108$) via bootstrapping using the method outlined by Preacher and Hayes (2008). The Valence Condition × Voter (supporter vs. opponent) interaction term was entered as the independent variable (controlling main effects and initial implicit theory), implicit theory was entered as the mediator, and participant ratings of how the past performance review should affect a candidate's current character were entered as the dependent variable (see Figure 10). Bootstrapping (1,000 samples, 95% CIs) revealed a significant indirect effect, CI [.02, .98], $p < .05$, suggesting that some of the perception of current character occurs through general person lay theories of malleability.

Discussion

Similar to Study 5, the present study revealed a shift in implicit theories particularly when opponents and supporters read negative information about a candidate's past. Supporters emphasize change, allowing candidates to be forgiven for past missteps; opponents highlight stability, which helps them hold onto the relevance of past failings. Once again, less shifting was seen in the positive condition—either because of a lack of motivation or

Figure 10. Path model demonstrating the mediating role of lay theory shift on relevance of past performance on current character (Study 6). The interaction between valence (negative vs. positive) and voter (supporter vs. opponent) predicts a shift in general person implicit theories, which in turn affects relevance of past performance on current character.

because an incremental theory can mean different things to supporters ("further growth is possible") and to opponents ("past successes do not predict future outcomes"). Importantly, no motivated shifting was observed among participants evaluating the neutral candidate, offering additional evidence of the role of motivation.

Study 7

In Study 7, we sought to mirror another real-world context in which implicit theories matter. Although the legal system mandates specific types and lengths of punishment for different crimes, beliefs about whether former criminal offenders should be evaluated with a "clean slate" or not after completing their sentence is a matter of debate. Employers routinely consider past criminal records (and not without reason), at least implicitly endorsing the view that a person's past actions are a reflection of his or her character and hence a sign of possible future behavior. Employers often have to make judgments and predictions about former convicts with limited personal knowledge, and may rely on their implicit theories about change and stability to help them interpret the incomplete information they have. Some crimes may be far more likely viewed as a mark of enduring character (or disorder) than others: sexual assault may carry many more entity implications than reckless driving, for instance. Child sexual assault is arguably near the top of the list of enduring crimes, where many people have such strong beliefs about the likelihood of recidivism that a previous offender is destined to face suspicion and harassment regardless of how much time has passed since the offence. The National Sex Offender registry (http://www.nsopw.gov in the U.S.), which allows the public access to information about previously convicted sex offenders, is a uniquely concrete instantiation of entity assumptions about sex offenders. The present study does not attempt to evaluate the appropriateness or accuracy of these implicit beliefs (and we acknowledge that recidivism rates *do* differ for different crimes; Statistics Canada, 2002). Instead, we investigate the psychological element of these perceptions: whether people might be especially likely to recruit a strong entity implicit theory to protect their family when situational threat is highest.

In the present study, we asked people to react to a hypothetical scenario involving a formerly convicted—and apparently rehabilitated—child sex offender. Most people might find a child sex offender worthy of caution or suspicion, evidence of rehabilitation notwithstanding. That said, we expected that some groups of people would be more threatened than others. We examined threat via one categorical variable and one manipulated variable. First, we expected that parents would be more threatened by a child sex offender than nonparents. Second, we expected that people would be more threatened if they were told that the previously convicted sex offender was requesting permission to relocate to their community (vs. a community 200 miles away). We predict that parents who encounter a proximal threat to their children will be motivated to exaggerate the threat to enhance vigilance to the danger, akin to how people especially fearful of spiders visually exaggerate their perceived size (Vasey et al., 2012). Hence, *parents* who expected the previously convicted child sex offender to move *into their neighborhood* should be most concerned and most likely to invoke a more entity implicit theory (i.e., if people fundamentally do not
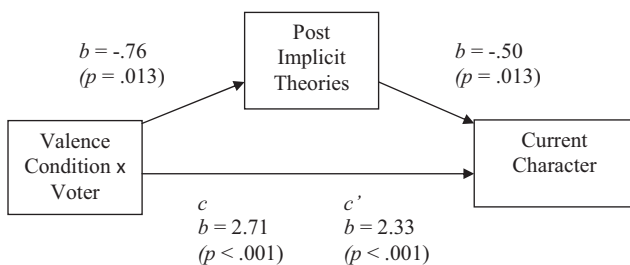
change, then they are justified in their resistance to giving this former convict a second chance). Nonparents and those who expected the sex offender to relocate to a distant community—that is, those who are relatively unthreatened by this former criminal—should have little reason to shift their implicit theories.

In the previous studies, to avoid consistency demands, we did not include a complete measure of implicit theories prior to the manipulation, though in some cases, we embedded a single item into the premeasure. In the present study, however, we wanted to directly examine the degree to which people shift their endorsed implicit theory even over a relatively short time span when faced with a compelling enough reason to change their viewpoint. We included the general person implicit theories scale (Dweck, 1999) at the beginning of the study and then asked participants to complete the identical scale after reading the scenario. This allows us to more directly examine the degree to which people shift from their initial theory after the experimental manipulation. Note that we did not expect that people would make wholesale jumps to the other side of the implicit theory continuum (e.g., a strong incrementalist would not transform into a committed entity theorist). Other research has demonstrated that attitudes and beliefs will change, but within constraints set by their starting point (Sanitioso, Kunda, & Fong, 1990; Starzyk, Fabrigar, Soryal, & Fanning, 2009).

We also asked participants to evaluate the offender at the time of the conviction and postrehabilitation. We expected that participants—particularly those who were most threatened by the offender (parents who envisioned him relocating nearby) might adopt a more stable implicit theory as a means of justifying their continued condemnation of the offender. We expected that all participants would deplore the offender's actions at the time of conviction but that they might differ in the degree to which they gave him the benefit of the doubt closer to the present. Despite being provided evidence of the offender's exemplary behavior during rehabilitation, we thought that participants who shifted toward an entity implicit theory would be most unwilling to set aside past actions, and would continue to condemn the offender even after rehabilitation.

Method

Participants. One hundred eighty American residents recruited from Amazon's Mechanical Turk participated in our online study in exchange for $0.50 dollars. Ten participants failed to answer the attention check embedded in the survey, leaving 170 participants for the final analyses (103 women, two undisclosed; $M_{age} = 34.82$, $SD = 13.21$). Of those participants, 74 reported having children and 96 reported that they did not. Missing data on some variables results in slightly varying degrees of freedom across analyses.

Procedure. Participants first completed demographics including age, gender and whether or not they had children.[4] Next, participants completed a premeasure of general person implicit theories, read the scenario, then completed dependent measures.

Implicit theories premeasure. Following the demographics questionnaire were five questions adapted from Dweck (1999) that measured participants' general person implicit theories ($\alpha = .94$), with response options ranging from 1 (*disagree*) to 6 (*agree*). Higher scores indicated a more incremental theory. As in Study 6,

the present study is a more conservative test of whether people might selectively endorse a different general implicit theory of others even after focusing only on one specific individual.

Experimental manipulation. Participants were asked to read one of two fictitious scenarios and imagine that the circumstances were actually happening in the state where they live. The two scenarios were exactly the same except for alternate endings.

> The offender, Mr. Podmore, pled guilty to and was convicted of five counts of aggravated sexual assault towards a minor (boys and girls whose ages ranged from 9 to 13). After serving 5 years, the offender was released on parole and set up in a shared parolee facility in a distant rural location.

During incarceration, the prosecutor's office noted exceptional behavior on the offender's behalf, which played a substantial role in granting early parole. Among the benevolent behaviors displayed during the offender's incarceration included his well-received cooperation with daily protocol during his entire stay at his facility, his ability to facilitate team cooperation in a variety of work settings, and his pivotal role in reorganizing the "Continuing Education Program" for convicted felons at his institution.

Five years after his conviction, the offender was released on parole into a halfway program in a distant rural location. Six months into the program, the offender was granted individual living conditions due to his continued cooperation and exemplary behaviors. Authorities found no evidence, whatsoever, that the offender pursued his previous connection to minors in any fashion. In fact, the offender was found to have acted highly morally in all aspects of community service while incarcerated as well as when he was in the release program.

Recently, Mr. Podmore, age 51, asked to be relocated to a more urban setting and has been given the go-ahead to relocate to [**your community, not far from where you live / a community 200 miles away from yours**].

Manipulation check. We expected that parents would be more threatened by the child sex offender scenario than nonparents and that people expecting relocation to their community would be more threatened than those expecting distant relocation. To assess affective responses to the scenario, participants were asked how the proposed relocation of the offender made them feel emotionally, ranging from 1 (*very positively*) to 7 (*very negatively*).

Postmanipulation implicit theories. After the manipulation, participants once again completed a five-item-adapted Dweck (1999) general person implicit theory measure ($\alpha = .95$).

Additional dependent measures. Participants were asked to evaluate the offender's past behaviors (i.e., at conviction) and recent behaviors (i.e., during rehabilitation) ranging from 1 (*very negative*) to 7 (*very positive*). Finally, participants were asked to indicate (in an open-ended format) the minimum sentence they

---

[4] Age and gender were controlled throughout Study 7. Age was included to indirectly account for whether parents were likely to have young—and hence at-risk—children (we did not ask children's ages, because we thought that in the context of a survey about child sex offenders, the question may have seemed overly intrusive and may have made parents nervous). Gender was included because female participants rated the offender more harshly ($M = 1.22$, $SD = .68$) than did men ($M = 1.52$, $SD = 1.22$), $F(1, 155) = 3.18$, $p = .05$.

would be willing to accept and the maximum sentence they would be willing to impose on child sex offenders in general.

Results

Implicit theories premeasure. Participants' initial endorsement of person implicit theories (i.e., prior to the manipulation) did not differ by condition or parent status: Main effects and interaction were nonsignificant ($Fs < 1.64$, $ps > .20$).

Manipulation check. As expected, both parenthood and proximity seemed to exacerbate the threat level when considering a previously convicted child sex offender. Parents reported feeling significantly more negatively about the proposed relocation ($M = 5.45$, $SD = 1.23$) than did nonparents ($M = 4.80$, $SD = 1.21$), $F(1, 136) = 9.36$, $p = .003$, $\eta^2 = .064$. In addition, participants felt significantly more negatively about the relocation when the offender would be nearby ($M = 5.47$, $SD = 1.30$) rather than 200 miles away ($M = 4.80$, $SD = 1.13$), $F(1, 136) = 10.90$, $p = .001$, $\eta^2 = .074$. The Parenthood × Proximity interaction was not significant ($p = .616$).

Shifting implicit theories. To capture the degree to which people shifted their general person implicit theories after exposure to the offender relocation scenario, we ran a mixed ANCOVA controlling for age and gender,[5] with pre- and postimplicit theories as the within-subject factor and proximity (close vs. distant) and parenthood (parent vs. nonparent) as between-subjects factors. As expected, a three-way interaction emerged, $F(1, 137) = 4.91$, $p = .028$, $\eta^2 = .04$.

To examine our a priori hypothesis, tests of simple effects revealed that when the offender relocation was to be in the participants' own community (i.e., the close condition), only those who had children shifted toward an entity person theory, $F(1, 137) = 7.58$, $p = .007$, $\eta^2 = .05$, whereas those without children did not differ in their implicit theories pre- to postscenario ($p = .56$). Refer to Table 3 for adjusted means and standard deviations.

Furthermore, looking only at the implicit theory scores after the manipulated scenario, parents in the close condition leaned marginally more toward an entity theory than parents in the distant condition (i.e., a community 200 miles away), $F(1, 137) = 3.85$, $p = .082$, $\eta^2 = .03$.

Offender appraisal at conviction and postrehabilitation. We hypothesized that given the nature of the offender's crimes, most participants would find his previous criminal behaviors to be appalling regardless of condition. However, the scenario was constructed in such a way that participants could give the offender "credit" for his exemplary behaviors during the rehabilitative process, including his excellent behaviors noted during the previous year while on parole. We expected that those participants most threatened by the offender (parents in the close relocation condition) would be most likely to cling to his past behavior as the true mark of his character and resist giving him the benefit of the doubt regarding his recent behavior. Participants were asked to rate the valence of the offender's past behaviors (i.e., at conviction) and recent behaviors (i.e., at rehabilitation)—differences between these ratings can indicate perceived change over time. We ran a mixed ANCOVA controlling for age and gender, with time (at conviction vs. rehabilitation) as the within-subject variable and proximity (close vs. distant) and parenthood (parent vs. nonparent) as between-subjects variables. Not surprisingly, a main effect of

time, $F(1, 131) = 21.93$, $p < .001$, $\eta^2 = .14$, indicated that, overall, people rated the offender more favorably after rehabilitation ($M = 5.46$, $SD = 1.18$) than at conviction ($M = 1.37$, $SD = .98$). In addition, the predicted Time × Parenthood × Proximity interaction was significant, $F(1, 131) = 11.31$, $p = .001$, $\eta^2 = .08$.

To break down the three-way interaction, we next examined offender evaluations at conviction versus rehabilitation separately. Across conditions, participants found the offender's earlier conduct to be equally deplorable (all $Fs < 1.83$, $ps > .18$). However, participants' ratings of the offender's recent behaviors revealed a significant Proximity × Parenthood interaction, $F(1, 136) = 9.10$, $p = .003$, $\eta^2 = .06$. Simple effects indicated that parents reading about the offender relocating to their community rated his recent behaviors during rehabilitation less favorably ($M = 5.09$, $SD = 1.27$) than did nonparents in the close condition ($M = 6.01$, $SD = .80$), $F(1, 136) = 11.09$, $p = .001$, $\eta^2 = .08$. This suggests that participants most likely to be threatened (parents considering a proximal offender) were less likely to acknowledge that exemplary recent behaviors might reflect real change. When the offender was distant to participants (i.e., 200 miles away), there were no differences on ratings of the offender's recent behavior among parents ($M = 5.53$, $SD = 1.05$) and nonparents ($M = 5.28$, $SD = 1.44$), $F(1, 136) = .74$, *ns*.

Do shifts in person implicit theories mediate perceptions of rehabilitation? We conducted a mediation analysis ($n = 137$) using the Preacher and Hayes (2008) bootstrapping procedure (see Figure 11). We controlled for age and gender, past behavior ratings (i.e., at conviction), initial implicit theories, and the main effects of proximity condition and parenthood. The Proximity × Parenthood interaction was entered as the independent variable, offender behavior ratings at rehabilitation as the dependent variable, and the postimplicit theories as the mediator. We expected that people's shifts in implicit theories would at least partially mediate people's judgments of offender rehabilitation (those who gravitate toward an incremental theory would see the most evidence of positive rehabilitation). Bootstrapping (1,000 samples, 95% CIs) revealed an indirect effect at $p < .05$, as indicated in the confidence interval that does not contain zero; CI [.01, .66].

Discussion

In the present study, we tested the selective shifting hypothesis in a distinct, socially relevant context, and more directly examined the degree to which implicit theory endorsement can change even over a short period of time. Only participants with a specific reason to see a former child sex offender as a direct threat (parents imagining the offender moving nearby) shifted their implicit theories to invoke the belief that people's core attributes really do not change. Furthermore, this shift toward the entity perspective predicted more unforgiving evaluations of the offender postrehabilitation. Selective implicit theory endorsement in this domain seemed particularly relevant given the debate about sex offender

---

[5] Mixed ANOVA results without controlling for age and gender indicate that although the three-way interaction did not emerge significant at the .05 level, $F(1, 137) = 1.76$, $p = .187$, simple effects tests predicting our main hypotheses emerge with the same pattern of results. Implicit theory shift emerged only for parents in the close condition, $F(1, 137) = 5.90$, $p = .016$, $\eta^2 = .034$.

Table 3
Study 7: Adjusted Means and Standard Deviations of Implicit Theories (Prescenario and Postscenario) Between Conditions

| | | Implicit theories | |
| | | Premeasure M (SD) | Postmeasure M (SD) |
Relocation condition	Parent vs. nonparent		
Your community (close)	Nonparent	3.29_a (1.22)	3.40_a (1.21)
	Parent	3.18_a (1.07)	2.90_b (1.04)
200 miles away (distant)	Nonparent	3.48_a (1.23)	3.39_a (1.27)
	Parent	3.58_a (1.19)	3.52_a (1.33)

Note. Different subscripts within a row (from pre to post) indicate a significant difference.

registries and the degree to which they should be available to the public (e.g., LaGinga, 2007; Lancaster, 2013).

These findings also suggest how emotions can play a role in the development of public policy, leading to a form of NIMBYism ("Not In My Back Yard"; see Schively, 2007, for a review). As this study shows, it is acceptable for a felon who has completed his or her sentence to be reintegrated into a community as part of his or her rehabilitation; however, this reintegration is only acceptable if it is done in a community far away. If the reintegration takes place in one's own community, then the idea that the felon *could have been* rehabilitated is eschewed (at least by the parents in that community) in favor of the idea that "once a felon, always a felon."

These findings suggest that, to promote the safety of their families, people may shift their basic assumptions about crime and their corresponding implicit theories about the stability of core traits. Rather than relying on empirical evidence of rehabilitation or actual recidivism risks, people may reframe the debate by shifting their underlying beliefs about whether rehabilitation is even possible. In some cases, this protective instinct might serve us well to guard against threat; in other cases, it likely produces unintended consequences including a self-fulfilling prophecy (e.g., marginalized felons who are barred from reintegration may be more likely to reoffend; Nilsson, 2003).

General Discussion

Across seven studies, we demonstrate a dynamic account of the strategic fluidity of implicit theories of change and stability, show-

Figure 11. Path model demonstrating the mediating role of lay theory shift on expectations of criminal rehabilitation (Study 7). The interaction between proximity (close vs. far) and parenthood (parent vs. not) predicts a shift in general person lay theory when considering a sex offender, which in turn affects judgments of rehabilitation (i.e., current behavior).

ing that people actively regulate and shift their endorsement of implicit theories in subtle yet meaningful ways. Further, we demonstrate that this process depends on motivation; when we removed the motivation to reach a particular directional conclusion (manipulated in various ways in Studies 2, 3, 6, and 7), participants did not shift.

When people are faced with information about themselves or relevant others, that information has different implications depending on whether they adopt a belief that people change or stay the same over time. Specifically, negative information is less relevant (and less threatening) now if viewed as potentially changeable rather than fixed: An earlier foible can be relegated to the past or seen as a lasting mark on one's character depending on the implicit theory accessed in making the judgment. Although past research has certainly demonstrated that implicit theories are sensitive to situational factors such as parent/teacher feedback and direct argument/intervention (Aronson et al., 2002; Good et al., 2012; Hong et al., 1999; Mueller & Dweck, 1998; Plaks & Stecher, 2007), our findings are the first to demonstrate a motivated shift in implicit theories in a variety of domains in which people are motivated to reach a specific, directional conclusion about the self or others.

All seven studies in the present article were designed to present participants with information about the self or relevant others in which an incremental theory would lead to different conclusions about an individual's present or future attributes than would an entity theory. Studies 1–3 demonstrated that people prefer an incremental theory when faced with negative information about the self (either a current or past failure). Indeed, Study 1 demonstrated that self-protective goals may trump the well-established effect of the implicit theories manipulation: People rejected arguments in favor of entity theory when accepting it would have implied that their current failures in intelligence would endure. Although past research has shown entity beliefs to be maladaptive following failure (Dweck & Leggett, 1988), these results provide an intriguing first hint that people may be able to shift away from that perspective when sufficiently motivated to do so, potentially avoiding negative outcomes. Of course, in the real world, people have competing motivations and ways to handle threat: We do not argue that people will always adaptively shift to an incremental view in the face of failure—if they did, far fewer negative effects of entity theory in achievement contexts would be observed in the literature (e.g., Dweck, Chiu, & Hong, 1995b; Henderson & Dweck, 1990; Hong et al., 1999; Nussbaum & Dweck, 2008).
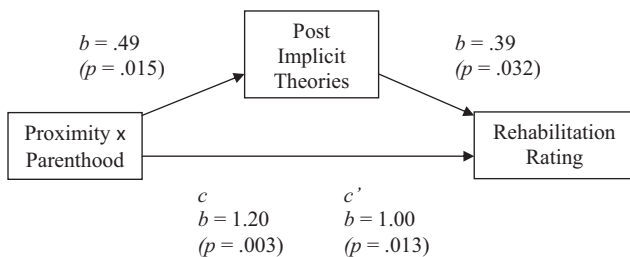
However, it may suggest that understanding the motivational influences on implicit theory endorsement could help researchers and educators create even more effective interventions and to understand factors that could put people at risk of adopting maladaptive theories. For instance, people might be especially receptive to arguments in favor of an incremental theory while a recent failure still stings: this may be an ideal time to introduce an intervention. Conversely, people might be at risk of gravitating toward an entity theory after a string of successes, when people would most desire to attribute these outcomes to enduring personal qualities.[6]

Studies 4–6 demonstrated that we may also invoke different implicit theories to interpret the histories of relevant others, such as political candidates we support or oppose. We can brush aside the attack ad "dirt" on our favorite candidate by resonating with an incremental theory, and we can allow similar mud to "stick" to a disliked candidate by shifting toward an entity viewpoint. Finally, Study 7 showed that when people had special reason to be threatened by a previously convicted child sex offender (parents in close proximity), the notion that *people, at core, never change* was highly endorsed. In each case, we show evidence that participants select an implicit theory that best benefits their current motivations. The dynamic shifts in implicit theories in this context may indicate that motivated cognition is likely to push aside empirical evidence to even influence policy decisions. Indeed, Rattan, Savani, Naidu, and Dweck (2012) showed that implicit theories about the changeability of intelligence predict support for educational programs—thus, it is plausible that people's perceptions of the changeability of those with criminal records are involved in their judgments about legal policy and politics (e.g., punishment vs. rehabilitation).

Theory Fluidity Versus Chronicity?

Although we highlight a previously undocumented fluidity in individuals' implicit theories, our findings are not inconsistent with current theory and research. Past research shows that implicit theories can quite readily be shifted by feedback, argument, or intervention favoring one perspective (Aronson et al., 2002; Good et al., 2012; Hong et al., 1999; Mueller & Dweck, 1998; Plaks & Stecher, 2007); Dweck and Leggett (1988) recognized the possibility that yet other situational factors might alter people's implicit beliefs. Our findings are the first to demonstrate how readily and systematically people's implicit theories might shift when they can be a tool to help people reach preferred conclusions.

Moreover, our findings do not suggest that chronic individual differences in implicit theories do not matter. Participants only shifted when they were sufficiently motivated by a threat to self-concept, to defend or cast aspersions on liked or disliked others, or to erect a protective barrier around one's children. In addition, even under these circumstances, people did not entirely switch allegiance—people's implicit theories fall on a continuum even though they are often described as "either" incremental or entity, and we describe systematic, nontrivial shifts toward one end or the other of the scale, not total conversion across groups. Nonetheless, these shifts in theory were consequential: they predicted people's reactions to failing a test, willingness to overlook the past transgressions of political candidates, and even judgments of a previously convicted criminal's rehabilitation. Even if these

shifts in implicit theories are relatively temporary and fluctuating, they could play an important role in personal performance decisions, in the voting booth, and in the jury box.

It is likely that even with these implicit theory shifts, chronic theories matter. People may even return to some chronic "baseline" when the threat passes. Although our studies are not designed to examine these possibilities, future research should examine the interplay between the chronicity and fluidity of implicit theories. It may be that some people are more apt to shift than others, or perhaps everyone's theory endorsement is subject to revision but within constraints set by their dominant theories (e.g., Sanitioso et al., 1990). Our findings might indirectly shed light as well on how chronic implicit theories develop. If people regularly find themselves in situations where an entity or an incremental theory allows them to reach their preferred conclusions, they may gravitate toward that preferred theory more and more often until it becomes their chronic or dominant perspective. This might suggest, for instance, that a year of mixed successes in class or in sports would encourage a more incremental perspective than a year of straight As or wins on the field (see Mueller & Dweck, 1998, for related phenomena). People who constantly succeed may begin to adopt an entity theory of talent over hard work, much like children praised for performance do (Mueller & Dweck, 1998). Indeed, one instance of maladaptive praise ("you're so smart!") does not set a child's implicit theory for life—it is consistent reinforcement of a certain theory over the course of years that is hypothesized to move someone to adopt their chronic implicit theory. In the present research, we posit that this reinforcement need not be so explicit or external. Internally driven motivations (perhaps paired with more external feedback) may, over time, shape the chronic implicit theories people come to hold.

It should be noted that previous research has demonstrated that in certain circumstances, participants react negatively when presented with evidence opposing their chronic theory. Specifically, Plaks, Grant, and Dweck (2005) and Plaks and Stecher (2007) found that participants provided with information that violated their dominant theory experienced anxiety and exhibited attempts to reestablish personal control (i.e., persisted longer at a task giving theory-violating feedback). Plaks and colleagues argued

---

[6] We recently conducted a pilot study examining the ways implicit theories might change over longer periods of time. We wondered whether people who experienced more academic disappointments over the course of a term might show a tendency to prefer an incremental theory over time, whereas those who experienced mostly successes might be tempted to begin adopting a more entity perspective. At the beginning of the fall term, we obtained implicit theories (intelligence and general person) scores, then followed up in the winter term (4–6 months later) with $N = 41$ students. We asked these students to report extensively on their academic outcomes in the previous term. They listed each major test and assignment in each class they took the previous semester and indicated whether the outcome on that unit was something they viewed as a disappointment, as a success, or as neutral (neither a success nor a disappointment). We also obtained their intelligence and general person implicit theories a second time. We found that a greater proportion of disappointments over the course of the last term predicted a marginal shift toward a more incremental theory of intelligence ($b = .218$, $t = 1.78$, $p = .083$), whereas a greater proportion of successes over the course of the last term predicted a significant shift toward a more entity theory ($b = -.312$, $t = 2.72$, $p = .01$). Because of the small sample size and retrospective nature of these outcomes, this finding should be interpreted with caution, but suggests an important route for future research.

that the pattern of results indicated that participants will resist moving from their dominant theory. How, then, do we reason participants will shift on their own? First, in the research conducted by Plaks and colleagues, stimuli were set up to directly contradict people's expectations about others (Plaks et al., 2005) and their own performance (Plaks & Stecher, 2007). Hence, in those studies, the implicit theory itself was salient and, presumably, under threat. We hypothesize that participants may not always be so committed to a salient dominant implicit theory, particularly if some other aspect of the self (or relevant other) is under threat instead. That is, participants will shift their implicit theory to preserve a different and more salient goal. Whereas Plaks and colleagues showed that people are motivated to preserve their dominant theory when it is directly threatened, we demonstrate that people are motivated to shift their implicit theories when other, personally important views are threatened.

Indeed, Plaks and Stecher (2007) argued that people should be made aware of the potential maladaptiveness of each theory, and interventions to educate lay people about the consequences of holding a given theory of change would help them more flexibly adapt to situations. They suggest that such interventions could have implications for academic and interpersonal success. The data presented here, coupled with work by Poon and Koehler (2008), suggests that people already do this flexible adaptation to some degree. However, in many situations, it is obvious that the "wrong" theory is maintained (e.g., Dweck et al., 1995a; Dweck & Leggett, 1988) and people fall into self-defeating motivational patterns (Nussbaum & Dweck, 2008).

Future Directions

Motives for implicit theory endorsement. Our findings suggest that a range of appraisal goals can influence the implicit theories people invoke. We focused on goals related to protecting the self and relevant others from threat, and the related goal of disparaging others that could be a source of threat (see also Rattan et al., 2012). It is plausible that implicit theories may be flexibly summoned in support of many other goals as well: From coping with a trauma to eliciting optimal task motivation, people may benefit from having access to, and the ability to flexibly move back and forth between, both theories. Similarly, people may shift toward a particular theory to support their political views on specific issues—causes of and possible responses to everything from poverty to drug use to homosexuality may be heavily influenced by whether an incremental or entity view is invoked. In close relationships, people may benefit from shifting toward an entity theory when sailing is smooth but quickly lean on an incremental view in stormier weather.

Mechanism. Although this article has provided evidence for the existence of implicit theory shifting, the precise mechanism by which people shift their implicit theories remains undocumented. Indeed, we focus primarily on shifting implicit theories *as the mechanism by which* people successfully support the conclusions they wish to reach. However, past research suggests likely processes that may account for some of this shifting. Sanitioso and colleagues (1990) demonstrated that shifts in self-views are accomplished via a motivated memory search for supporting evidence (and hence limited by the number of supporting instances recalled). Poon and Koehler (2006) showed that people have

access to supporting examples of both implicit theories: whichever comes to mind might determine the situational shift. Indeed, chronic or dominant theories might be characterized by the set of memories experienced with greatest fluency, with its corresponding effect on judgments of veracity (Unkelbach, 2007; Wänke, Bohner, & Jurkowitsch, 1997).

Who is shifting? Might the tendency to flexibly shift theories (or not) be an individual difference in itself? Work by Ziegler and Stoeger (2010) potentially speaks to this issue. Their research revealed that highly successful students treated successes and failures with different theories of change: successes were seen as fairly permanent, whereas failures and ability deficits were seen as changeable. Although the authors suggested that gifted students have separate "domains" for success and failure—even within the highly specific domain of "physics class," for example—we would suggest that highly successful students are simply more adept at shifting their implicit theories to motivate themselves. That is, when they succeed, they will believe (temporarily) in permanence, but when they fail, they cleave to mutability. It may be that the more easily a student is able to shift from one theory to the other depending on context, the more they conserve and promote their scholastic motivation, and in turn the more successful they are in academics.

In addition to individual differences in flexibility, it is possible that different people shift their implicit theories in different contexts. For example, someone who is already an incremental theorist may not need to shift as much as an entity theorist after failure because their dominant theory already protects them from threat. In contrast, it might be the incremental theorist who does more shifting in contexts where an entity perspective will help them support their preferred conclusions (such as holding on to the past misdeeds of a disliked political candidate). Future research into this issue could preselect a large number of incremental and entity theorists at the outset to systematically examine where the shifting takes place.

Conclusion

The present research complements and extends past implicit theory research by Dweck and colleagues' by demonstrating how people selectively shift their implicit theory endorsement to help them reach the conclusions they most desire about themselves and others. These findings are highly consistent with the body of work demonstrating that implicit theories are sensitive to situational feedback, context, and argument (Blackwell et al., 2007; Hong et al., 1999; Molden et al., 2006; Murphy & Dweck, 2010; Plaks & Stecher, 2007. Unlike past research, however, we demonstrate that people alter their theories without any direct message priming or encouragement to take one perspective or the other: they appear to have access to both and can toggle toward one or the other as the situation demands. This has both positive implications (for self-protection after failure, for instance) and more gloomy ones (people may "attack" others and make their past misdeeds "stick" by selecting an entity theory for the occasion). Voting and policy decisions may be made by appealing to basic assumptions about the fixed or mutable nature of attributes—but even those basic assumptions may not be as reliable or consistently applied as previously thought. This work reveals the dynamic nature of implicit theories of change and suggests that they are more flexible

than previously conceived. This initial step into examining the change in people's theories of change enables reinterpretations of past research, and present several new avenues of future research. Future research should more fully explore the links between theory chronicity and flexibility, and how our knowledge of one informs and modifies our understanding of the other.

References

Arbuckle, J. L. (2006). *Amos (Version 20.0)* [Computer program]. Chicago, IL: SPSS.

Aronson, J., Fried, C. B., & Good, C. (2002). Reducing the effects of stereotype threat on African American college students by shaping theories of intelligence. *Journal of Experimental Social Psychology, 38,* 113–125. doi:10.1006/jesp.2001.1491

Baumeister, R. F. (1998). The self. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., pp. 680–740). New York, NY: McGraw-Hill.

Blackwell, L., Trzesniewski, K., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78,* 246–263. doi:10.1111/j.1467-8624.2007.00995.x

Burnette, J. L., & Finkel, E. J. (2012). Buffering against weight gain following dieting setbacks: An implicit theory intervention. *Journal of Experimental Social Psychology, 48,* 721–725. doi:10.1016/j.jesp.2011.12.020

Carter, S. (2001). Never change. On *The Blueprint* [CD]. New York, NY: Roc-A-Fella Records.

Chiu, C. Y., 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. doi:10.1037/0022-3514.73.5.923

Chiu, C., Hong, Y., & Dweck, C. S. (1997). Lay dispositionism and implicit theories of personality. *Journal of Personality and Social Psychology, 73,* 19–30. doi:10.1037/0022-3514.73.1.19

Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development*. Philadelphia, PA: Psychology Press.

Dweck, C. S., Chiu, C., & Hong, Y. (1995a). Implicit theories and their role in judgments and reactions: A world from two perspectives. *Psychological Inquiry, 6,* 267–285. doi:10.1207/s15327965pli0604_1

Dweck, C. S., Chiu, C., & Hong, Y. (1995b). Implicit theories: Elaboration and extension of the model. *Psychological Inquiry, 6,* 322–333. doi:10.1207/s15327965pli0604_12

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. doi:10.1177/0146167293195015

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95,* 256–273. doi:10.1037/0033-295X.95.2.256

Good, C., Rattan, A., & Dweck, C. S. (2012). Why do women opt out? Sense of belonging and women's representation in mathematics. *Journal of Personality and Social Psychology, 102,* 700–717. doi:10.1037/a0026659

Halperin, E., Russell, A. G., Trzesniewski, K. H., Gross, J. J., & Dweck, C. S. (2011). Promoting the Middle East peace process by changing beliefs about group malleability. *Science, 333,* 1767–1769. doi:10.1126/science.1202925

Henderson, V., & Dweck, C. S. (1990). Motivation and achievement. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 308–329). Cambridge, MA: Harvard University Press.

Higgins, E. T. (1996). Self digest: Self-knowledge serving self-regulatory functions. *Journal of Personality and Social Psychology, 71,* 1062–1083. doi:10.1037/0022-3514.71.6.1062

Hong, Y., Chiu, C., Dweck, C. S., Lin, D. M. S., & Wan, W. (1999). Implicit theories, attributions, and coping: A meaning system approach. *Journal of Personality and Social Psychology, 77,* 588–599. doi:10.1037/0022-3514.77.3.588

Jonas, E., McGregor, I., Klackl, J., Agroskin, D., Fritsche, I., Holbrook, C., . . . Quirin, M. (2014). Threat and defense: From anxiety to approach. *Advances in Experimental Social Psychology, 49,* 219–286. doi:10.1016/B978-0-12-800052-6.00004-4

Jost, J. T., Pelham, B. W., Sheldon, O., & Sullivan, B. N. (2003). Social inequality and the reduction of ideological dissonance on behalf of the system: Evidence of enhanced system justification among the disadvantaged. *European Journal of Social Psychology, 33,* 13–36. doi:10.1002/ejsp.127

Kammrath, L., & Dweck, C. S. (2006). Voicing conflict: Preferred conflict strategies among incremental and entity theorists. *Personality and Social Psychology Bulletin, 32,* 1497–1508. doi:10.1177/0146167206291476

Klein, W. M., & Kunda, Z. (1992). Motivated person perception: Constructing justifications for desired beliefs. *Journal of Experimental Social Psychology, 28,* 145–168. doi:10.1016/0022-1031(92)90036-J

Kunda, Z. (1987). Motivation and inference: Self-serving generation and evaluation of evidence. *Journal of Personality and Social Psychology, 53,* 636–647. doi:10.1037/0022-3514.53.4.636

Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin, 108,* 480–498. doi:10.1037/0033-2909.108.3.480

LaGinga, M. (2007, December 10). Megan's Law listing may be tied to slaying. *Los Angeles Times*. Retrieved from http://articles.latimes.com/2007/dec/10/local/me-molester10

Lancaster, R. N. (2013, February 20). Panic does not make for good policy. *The New York Times Opinion Pages*. Retrieved from http://www.nytimes.com/roomfordebate/2013/02/20/too-many-restrictions-on-sex-offenders-or-too-few/panic-leads-to-bad-policy-on-sex-offenders

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. doi:10.1037/0022-3514.74.6.1421

Libby, L. K., & Eibach, R. P. (2002). Looking back in time: Self-concept change affects visual perspective in autobiographical memory. *Journal of Personality and Social Psychology, 82,* 167–179.

McFarland, C., & Buehler, R. (2012). Negative moods and the motivated remembering of past selves: The role of implicit theories of personal stability. *Journal of Personality and Social Psychology, 102,* 242–263. doi:10.1037/a0026271

McFarlin, D. B., & Blascovich, J. (1984). On the Remote Associates Test (RAT) as an alternative to illusory feedback: A methodological note. *Basic and Applied Social Psychology, 5,* 223–229. doi:10.1207/s15324834basp0503_5

Miller, E. M., Walton, G. M., Dweck, C. S., Job, V., Trzesniewski, K. H., & McClure, S. M. (2012). Theories of willpower affect sustained learning. *PloS ONE, 7,* e38680. doi:10.1371/journal.pone.0038680

Molden, D. C., Plaks, J. E., & Dweck, C. S. (2006). "Meaningful" social inferences: Effects of implicit theories on inferential processes. *Journal of Experimental Social Psychology, 42,* 738–752. doi:10.1016/j.jesp.2005.11.005

Morgan, G. S., Mullen, E., & Skitka, L. J. (2010). When values and attributions collide: Liberals' and conservatives' values motivated attributions for alleged misdeeds. *Personality and Social Psychology Bulletin, 36,* 1241–1254. doi:10.1177/0146167210380605

Mueller, C. M., & Dweck, C. S. (1998). Praise for intelligence can undermine children's motivation and performance. *Journal of Personality and Social Psychology, 75,* 33–52. doi:10.1037/0022-3514.75.1.33

Murphy, M. C., & Dweck, C. S. (2010). A culture of genius: How an organization's lay theory shapes people's cognition, affect, and behavior. *Personality and Social Psychology Bulletin, 36,* 283–296. doi:10.1177/0146167209347380

Nilsson, A. (2003). Living conditions, social exclusion and recidivism among prison inmates. *Journal of Scandinavian Studies in Criminology and Crime Prevention, 4,* 57–83. doi:10.1080/14043850310005321

Nussbaum, A. D., & Dweck, C. S. (2008). Defensiveness versus remediation: Self-theories and modes of self-esteem maintenance. *Personality and Social Psychology Bulletin, 34,* 599–612. doi:10.1177/0146167207312960

Peetz, J., & Wilson, A. E. (2008). The temporally extended self: The relation of past and future selves to current identity, motivation, and goal pursuit. *Social and Personality Psychology Compass, 2,* 2090–2106. doi:10.1111/j.1751-9004.2008.00150.x

Peetz, J., & Wilson, A. E. (2014). Marking time selective use of temporal landmarks as barriers between current and future selves. *Personality and Social Psychology Bulletin, 40,* 44–56. doi:10.1177/0146167213501559

Plaks, J. E., Grant, H., & Dweck, C. S. (2005). Violations of implicit theories and the sense of prediction and control: Implications for motivated person perception. *Journal of Personality and Social Psychology, 88,* 245–262. doi:10.1037/0022-3514.88.2.245

Plaks, J. E., Levy, S. R., & Dweck, C. S. (2009). Lay theories of personality: Cornerstones of meaning in social cognition. *Social and Personality Psychology Compass, 3,* 1069–1081. doi:10.1111/j.1751-9004.2009.00222.x

Plaks, J. E., & Stecher, K. (2007). Unexpected improvement, decline, and stasis: A prediction confidence perspective on achievement success and failure. *Journal of Personality and Social Psychology, 93,* 667–684. doi:10.1037/0022-3514.93.4.667

Plaks, J. E., Stroessner, S. J., Dweck, C. S., & Sherman, J. W. (2001). Person theories and attention allocation: Preferences for stereotypic versus counterstereotypic information. *Journal of Personality and Social Psychology, 80,* 876–893. doi:10.1037/0022-3514.80.6.876

Poon, C. S. K., & Koehler, D. J. (2006). Lay personality knowledge and dispositionist thinking: A knowledge-activation framework. *Journal of Experimental Social Psychology, 42,* 177–191. doi:10.1016/j.jesp.2005.04.001

Poon, C. S. K., & Koehler, D. J. (2008). Person theories: Their temporal stability and relation to intertrait inferences. *Personality and Social Psychology Bulletin, 34,* 965–977. doi:10.1177/0146167208316690

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40,* 879–891. doi:10.3758/BRM.40.3.879

Proulx, T., & Heine, S. J. (2010). The frog in Kierkegaard's beer: Finding meaning in the threat-compensation literature. *Social and Personality Psychology Compass, 4,* 889–905. doi:10.1111/j.1751-9004.2010.00304.x

Pyszczynski, T., & Greenberg, J. (1987). Self-regulatory perseveration and the depressive self-focusing style: A self-awareness theory of reactive depression. *Psychological Bulletin, 102,* 122–138. doi:10.1037/0033-2909.102.1.122

Rattan, A., Savani, K., Naidu, N. V. R., & Dweck, C. S. (2012). Can everyone become highly intelligent? Cultural differences in and societal consequences of beliefs about the universal potential for intelligence. *Journal of Personality and Social Psychology, 103,* 787–803. doi:10.1037/a0029263

Ross, M., & Wilson, A. E. (2002). It feels like yesterday: Self-esteem, valence of personal past experiences, and judgments of subjective distance. *Journal of Personality and Social Psychology, 82,* 792–803. doi:10.1037/0022-3514.82.5.792

Sanitioso, R., Kunda, Z., & Fong, G. T. (1990). Motivated recruitment of autobiographical memories. *Journal of Personality and Social Psychology, 59,* 229–241. doi:10.1037/0022-3514.59.2.229

Schively, C. (2007). Understanding the NIMBY and LULU phenomena: Reassessing our knowledge base and informing future research. *Journal of Planning Literature, 21,* 255–266. doi:10.1177/0885412206295845

Schumacher, J. A., & Slep, A. M. S. (2004). Attitudes and dating aggression: A cognitive dissonance approach. *Prevention Science, 5,* 231–243. doi:10.1023/B:PREV.0000045357.19100.77

Sedikides, C. (1993). Assessment, enhancement, and verification determinants of the self-evaluation process. *Journal of Personality and Social Psychology, 65,* 317–338. doi:10.1037/0022-3514.65.2.317

Skitka, L. J., Bauman, C. W., & Mullen, E. (2008). Morality and justice: An expanded theoretical perspective and empirical review. In K. A. Hegtvedt & J. Clay-Warner (Eds.), *Advances in group processes: Justice* (pp. 1–27). Bingley, United Kingdom: Emerald.

Skitka, L. J., & Mullen, E. (2008). Moral convictions often override concerns about procedural fairness: A reply to Napier and Tyler. *Social Justice Research, 21,* 529–546. doi:10.1007/s11211-008-0085-9

Starzyk, K. B., Fabrigar, L. R., Soryal, A. S., & Fanning, J. J. (2009). A painful reminder: The role of level and salience of attitude importance in cognitive dissonance. *Personality and Social Psychology Bulletin, 35,* 126–137. doi:10.1177/0146167208325613

Statistics Canada. (2002, October 23). *Pilot analysis of recidivism among convicted youth and young adults.* Retrieved from http://www.statcan.gc.ca/daily-quotidien/021023/dq021023i-eng.html

Tesser, A. (2001). On the plasticity of self-defense. *Current Directions in Psychological Science, 10,* 66–69. doi:10.1111/1467-8721.00117

Unkelbach, C. (2007). Reversing the truth effect: Learning the interpretation of processing fluency in judgments of truth. *Journal of Experimental Psychology, 33,* 219–230. doi:10.1037/0278-7393.33.1.219

Vasey, M. W., Vilensky, M. R., Heath, J. H., Harbaugh, C. N., Buffington, A. G., & Fazio, R. H. (2012). It was as big as my head, I swear! Biased spider size estimation in spider phobia. *Journal of Anxiety Disorders, 26,* 20–24. doi:10.1016/j.janxdis.2011.08.009

Wänke, M., Bohner, G., & Jurkowitsch, A. (1997). There are many reasons to drive a BMW: Does imagined ease of argument generation influence attitudes? *Journal of Consumer Research, 24,* 170–178. doi:10.1086/209502

Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197–206.

Ziegler, A., & Stoeger, H. (2010). A learning oriented subjective action space as an indicator of giftedness. *Psychological Science Quarterly, 50,* 222–236.

(*Appendix follows*)

Appendix

Quotes Used for Study 3 Manipulation

Liberal candidate (Michael Ignatieff)	Conservative leader (Stephen Harper)
"If I am not elected (in Canada), I imagine I will ask Harvard to take me back," Ignatieff said. "I hope I'll be back in some shape or form." —Michael Ignatieff, *Harvard Crimson*	"In terms of the unemployed, of which we have over a million-and-a-half, I don't feel particularly bad for many of these people." —Stephen Harper, speaking in Montréal
Michael Ignatieff referred to the UK as his "adopted country," and voted in their elections instead of Canada's. —Michael Ignatieff, *Blood and Belonging*	"Canada appears content to become a second-tier socialistic country, boasting ever more loudly about its economy and social services to mask its second-rate status." —Stephen Harper, *National Post*
Ignatieff called the Canadian flag a "passing imitation of a beer label." —Michael Ignatieff, *Observer Magazine* (UK)	"If you're like all Americans, you know almost nothing except for your own country. Which makes you probably knowledgeable about one more country than most Canadians." —Stephen Harper, addressing an American Republican lobby group
"You have to decide what kind of America you want. . . . It's your country, just as much as it is mine." —Michael Ignatieff while working in the United States, CPSAN	"Canada is a Northern European welfare state in the worst sense of the term, and very proud of it." —Stephen Harper, addressing an American Republican lobby group
Ignatieff said that Canada has an entirely "bogus" reputation for being peacekeepers. He went on, saying "we used to have this ability, but we gave it away." —Michael Ignatieff, lecture at Trinity College	"There is no upside to the position Canada took." —Stephen Harper on Canada refusing to join the United States' war on Iraq as part of the "Coalition of the Willing," *Maclean's*

Note. Item descriptor is as follows: "Because politicians are in the public eye, they are often taken to task for things they said both recently and many years ago. Then, Canadians have to decide for themselves how relevant such quotes are to current circumstances. Below are several quotes or paraphrases from Michael Ignatieff [Stephen Harper] from, on average, around the year 2000. That is, on average, these quotes are from about 10 years ago."