Directed Abstraction Promotes Self-Concept Change following a Success

THESIS

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By

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Abstract

Some individuals fail to draw appropriately positive conclusions about themselves following a personal success, even when it is justified and adaptive to do so. This problem may be especially evident among people with negative self-concepts. Previous research has employed linguistic framing manipulations to guide participants toward desired conclusions (e.g. Salancik, 1974). Other work has specifically targeted individuals with low self-esteem, with the goal to encourage these individuals to consider the broader implications of a positive relationship event (Marigold, Holmes, & Ross, 2007, 2010). I drew on this and other work to create a directed abstraction manipulation that promotes positive self-concept change for individuals with negative self-views following a success experience.

In the first two studies, participants who had previously completed either a self-esteem measure (Study 1a) or a self-competence measure (Study 1b) were given success feedback on a test purportedly measuring “Intuitive Perception and Estimation Ability”. They then completed either a control writing task or the directed abstraction writing task. The directed abstraction task was designed to encourage broad, personal generalizations about the self (“Explain why you were able to achieve such a high score…”). Participants then completed questionnaires measuring the extent to which they generalized from their success, including an Ability scale indexing the extent to which they believed they had
high levels of the intuitive ability that the test presumably had measured. In Study 2, participants from an internet sample were asked to recall the last time they had spoken in public. They then completed either a control writing task or the directed abstraction manipulation, followed by dependent measures that included an Ability scale designed to measure self-perceived public speaking ability.

Linear regression analyses were used to examine the impact of directed abstraction on participants with positive and negative self-views. Although there were inconsistent or null results on some measures of generalization from the success (e.g. predicting future successes, attitudes toward public speaking in Study 2), a consistent pattern emerged for the Ability scales. Across all three studies, the directed abstraction manipulation led to increased Ability scores for participants with negative self-views (self-esteem in Study 1a, self-competence in Studies 1b and 2), but had little or no impact on the scores of participants with positive self-views.

Directed abstraction led participants who generally doubt themselves to nonetheless conclude that they had high levels of an ability following a success experience that had either just occurred or been recalled. This social influence technique could prove useful in any domain in which positive generalizations following a success experience are desired.
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Fields of Study

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Introduction

Sometimes people who seem to have every reason to believe in their abilities instead doubt themselves. Although they may succeed at specific tasks to such a degree that most people would infer a corresponding ability or aptitude, these individuals continue to believe that they lack competence in a particular domain. Consider Bob, a graduate student who is teaching for the first time. Supervisors who observe Bob’s lectures tell him that he is a good communicator and that he appears at ease before the class. His students likewise pay attention, ask questions, and otherwise act engaged and interested. Despite such positive signs, Bob surprises everyone by quitting at the end of the year, telling everyone that he is an awful teacher and is thus simply not cut out for the academic life. Why would someone like Bob believe he is a bad teacher, despite clear evidence to the contrary? How might people like Bob be induced to generalize from their success experiences, to revise their negative self-views in light of the evidence? The current research suggests that a simple directed abstraction exercise can help such individuals make the leap from behavioral success to inferences of an underlying ability.

In social psychology, the idea that individuals with negative self-views sometimes prefer to receive negative evaluations over positive evaluations has led to a large body of research exploring exactly when people seek self-verification of negative self-views rather than self-enhancement (e.g. Swann, Griffin, Predmore, & Gaines, 1987; Sedikides
& Strube, 1997; Kwang & Swann, 2010). Swann has argued that when an individual receives positive feedback that contradicts a negative belief about the self, that person experiences conflict between a positive affective response and a cognitive skepticism of the discrepant feedback, and that over time the cognitive response tends to dominate (Swann et al., 1987). In the case of successful task performance, individuals with negative self-concepts sometimes appear to resist attributing their success to high ability, whereas those with positive self-concepts have no such difficulties (Fitch, 1970).

Similarly, there is much evidence that people with negative relational self-views (i.e. low self-esteem) react to acceptance by relationship partners with skepticism and self-protective behaviors (e.g. Murray, Derrick, Leder, & Holmes, 2008).

Of course, in many cases such skepticism of self-discrepant feedback is adaptive. For example, I know from experience that I am not good at basketball. Many experiences have contributed to this specific negative self-view. Even if I play extremely well one day, I know that the next day I am likely to resume missing easy shots, and I would be ill-advised to attribute my success to ability and act accordingly (e.g. begin betting money on my games, try out for the NBA). In this instance and others, accurate self-knowledge is more valuable than feeling momentarily good about oneself and one’s abilities.

However, in some instances being overly skeptical of self-discrepant positive feedback is maladaptive. This is plainly the case when a negative self-view is simply inaccurate. For example, an attractive person may believe that she is unattractive despite all evidence to the contrary, and thus be hesitant to approach potential dating partners, remaining needlessly single. Failure to revise a negative self-view in the face of positive
feedback can also be maladaptive when the self-view in question is malleable (Dweck & Grant, 2008). The student who considers himself bad at math, but who one day performs well on a math quiz, might be better off reconsidering his previous assessment, insofar as a more positive self-view would lead to increased engagement and motivation in his math classes. In these examples, each individual would be better off accepting positive yet self-discrepant feedback and revising his or her self-concept upward to accommodate the new information.

The situation of low self-esteem individuals (LSEs) in romantic relationships is another case in which rejecting self-discrepant feedback leads to undesirable outcomes. A rich line of research by Murray and colleagues (e.g. Murray et al., 2008; Murray, Bellavia, Rose, & Griffin, 2003) demonstrates that LSEs are quick to perceive threats from relationship partners, respond to these perceived threats in negative ways that hurt the relationship, and in general react to closeness by drawing away defensively. LSEs, by definition, have negative interpersonal self-views (Leary & Baumeister, 2000), so a romantic partner choosing to be in a relationship with an LSE can be thought of as providing positive feedback that is at odds with the individuals low self-esteem. Rejecting acceptance cues and other positive relationship behavior from a significant other, and reacting by drawing away from the relationship, is a very unfortunate instance of choosing a negative self-view over positive feedback, with stark negative consequences for the LSE individual and his or her relationship.

Despite the fact that LSEs routinely discount positive feedback from relationship partners in ways that are clearly maladaptive, one intervention in particular has been
successful in leading LSEs to instead accept such positive but self-discrepant feedback from their partners. In a technique called abstract reframing, researchers asked participants to recall a compliment from a romantic partner and then write about the compliment in an abstract way (Marigold, Holmes, & Ross, 2007). The abstract reframing writing prompt asked participants to “Explain why your partner admired you. Describe what it meant to you and its significance for your relationship.” By asking participants to explain why their partner admired them rather than simply why their partner complimented them, the researchers used language that presupposed that the compliment indicated the partner’s positive regard. Having guided participants to assume that the compliment reflected their partner’s admiration, the rest of the manipulation encouraged participants to elaborate on what this positive regard meant for their relationship. Other participants were asked to describe the compliment in simple, concrete terms (“Describe exactly what your partner said to you. Include any details you can recall about where you two were at the time, what you were doing, what you were both wearing, etc.”). This control prompt made no presuppositions about why participants’ partners complimented them, nor did it encourage participants to generalize from the compliment to any broader meaning for their relationships.

In a series of studies, abstract reframing had no effect on HSEs, but it led LSEs to essentially act like the HSEs, reporting increases in happiness, state self-esteem, felt security, relationship satisfaction, and valuing of their relationships, compared to LSEs in the concrete condition (Marigold et al., 2007). LSEs in the abstract reframing condition even reported more positive relationship behaviors from their partners two weeks after
the initial session (Marigold et al., 2007). In later studies, abstract reframing prevented LSEs from defensively devaluing their relationships following a relationship threat, leading to a decrease in the relationship partners’ reports of the LSEs’ negative relationship behaviors during the two to three weeks following the threat (Marigold, Holmes, & Ross, 2010).

The abstract reframing writing manipulation used by Marigold and her colleagues (2007, 2010) is a powerful method of reshaping how people with negative relational self-views respond to positive relationship events. But how does it work? Semin and Fiedler’s linguistic category model (1988) proposes that the language used to describe an event varies on a continuum from concrete to abstract. At the most concrete are action verbs, which give information about a specific action carried out at a specific time and place (e.g. “John smiles at Mary”). On the abstract end are state verbs, which describe an ongoing characteristic or relationship (e.g. “John likes Mary”), and adjectives, which describe something intrinsic to an actor (e.g. “Mary is likable”). Each linguistic category communicates different types of information. In the case of abstract reframing, after recalling a time when their partner complimented them, participants were asked to either to describe why their partner “admired” them, a state verb that connotes an ongoing, stable state of positive regard from the partner to the participant, or to describe what their partner “said”, an action verb that simply gives information about what happened. According to the linguistic category model, by using the state verb “admired”, the abstract reframing writing prompt presupposed that the compliment reflected not just a single verbal behavior, but also a stable pattern of positive regard. Presumably, in
answering such a loaded question, participants in the abstract reframing condition made
the same assumption, leading them to consider their relationships in more positive,
adaptive ways.

Using linguistic frames to shape how individuals construe situations has a long
history in social psychology. In one early study, Salancik (1974) asked participants to
explain why they engaged in common academic behaviors by completing statements
ending in either “because I…” or “in order to…”’. Participants who completed “because
I…” statements tended to base their judgments of how much they enjoyed a course on
whether they engaged in behaviors showing intrinsic motivation, such as meeting with
the instructor or doing extra readings. In contrast, participants who completed “in order
to…” statements tended to base their judgments of how much they enjoyed the course on
whether they engaged in behaviors showing extrinsic motivation, such as completing
homework and assigned readings. In a similar vein, participants who completed the
“because I…” stems reported enjoying the course more, whereas those who completed
the “in order to…” stems reported thinking the course was more useful. The two sentence
stems, with their different built-in assumptions, led participants to base their judgments
on two different sets of information, and affected their conclusions about the class,
themselves, and their motivations accordingly. This manipulation was later validated in
the context of inferences about a romantic relationship, such that participants who were
asked to explain why they dated their partner by completing “in order to…” statements
rather than “because I…” statements later reported less love for their partner (Seligman,
Fazio, & Zanna, 1980).
Linguistically, Salancik (1974) found that completing the two different sentence stems led participants to use language with different attributional characteristics. Participants who explained why they engaged in academic behaviors by completing “because I…” statements tended to use verbs expressing personal desires, such as *want* or *like*, whereas those who completed “in order to…” statements tended to use externally-oriented verbs such as *to learn* or *to find out*. Both types of statement can be considered reason explanations (i.e. they refer to actors’ intentional states; Malle, 1999). However, the content of the reasons in the two conditions differs along the traditional internal/external attributional divide (Heider, 1958; Kelley, 1973). An explanation such as “I study because I want to learn the material” focuses attention on the actor’s desire to learn, whereas an explanation such as “I study in order to learn the material” focuses attention more on the material itself (Malle, 1999). By eliciting reasons that varied in attributional content (internal vs. external), the two sentence stems led participants to either intrinsic or extrinsic motivational explanations for their behavior.

More recently, linguistic framing has been used to alter participants’ attitudinal judgments of a variety of attitude objects (Walton & Banaji, 2004). Participants in this study were asked to express various preferences by filling in blanks in sentences that resulted in either noun statements (e.g. for food, “I am a _____ lover”) or verb statements (e.g. “I eat _____ a lot”). Participants then rated how strong, stable, and resilient these preferences were. Across two studies (Experiments 2 and 3), participants rated preferences they had been led to express using noun statements as stronger than those they had been led to express using verb statements. These results fit very well with Semin
and Fiedler’s (1988) linguistic category model, described earlier. On the concrete end of the abstraction continuum, when participants in the above study expressed their preferences in verb statements, they were simply describing actions that they perform “a lot”. And although the linguistic category model explicitly anchors the abstract end of the continuum with adjectives, nouns could be thought of as communicating even more abstract, stable, and generalizable meaning than adjectives. From an attribution framework, although sentences such as “I eat a chocolate a lot” may suggest person explanations insofar as the behavior seems stable across time (Kelly, 1973), sentences such as “I am a chocolate lover” clearly locate the reason for the behavior within the person.

The research reviewed demonstrates that participants led to describe behaviors or express preferences using language that strongly implies intentionality (Malle, 1999) or is abstract (Semin & Fiedler, 1988) at least temporarily shift their behavior explanations (Salancik, 1974; Seligman et al., 1980) and attitudes (Walton & Banaji, 2004) to match their language use. Research has also shown that verb tense is important, as verbs in the past imperfect tense (e.g. “She was studying for class”) imply more intentionality than verbs in the past perfect tense (e.g. “She studied for class”; Hart & Albarracín, 2011). Marigold and her colleagues (Marigold et al., 2007, 2010), as described earlier, incorporated some of these linguistic features into their abstract reframing manipulation, which has been very successful in encouraging individuals with low self-esteem to generalize from a romantic partner’s compliment.
The present research builds on these previous results to create a new, more general social influence technique, which I term directed abstraction. Like abstract reframing (Marigold et al., 2007, 2010), the directed abstraction technique employs abstract language that presupposes a positive, internal attribution following a success experience. Unlike the previous work, the current technique employs a sentence stem completion (Salancik, 1974) to more strongly direct participants toward explanations that include positive personal attributes, abilities, or skills. By using more general language that is not specific to any particular domain, the directed abstraction manipulation will be applicable to a broad range of situations in which generalizations from a success to an ability are desired. The aim is to encourage individuals who would not normally do so to draw broad, abstract conclusions from a personal success experience.¹

Studies 1a and 1b tested a directed abstraction writing task in the context of a standardized success in the lab. Study 1a used a measure of self-esteem to identify those individuals who are the least likely to spontaneously generalize from a success experience to a personal ability. Study 1b used a more specific measure, self-competence, to identify such individuals. In both cases, I expected low-scoring individuals who respond to the directed abstraction writing prompt to rate themselves higher in ability following a success than low-scoring individuals in a control condition. Study 2 extended the findings of Studies 1a and 1b to the domain of memories of past successes.

¹ I have chosen the term “directed abstraction” over “abstract reframing” for several reasons. First, there is much more at play in this manipulation than simple abstraction (see Discussion for evidence that abstraction alone may have a negative influence on participants with negative self-concepts). Thus, the “directed” part of the manipulation appears critical. Second, the technique is useful both for reframing past events (Study 2) and for guiding the initial framing of events that have just occurred (Studies 1a-1b), so “reframing” seems needlessly restrictive.
Participants recalled a real-life success experience in the domain of public speaking, completed a directed abstraction or a control writing task, and then rated their public-speaking ability. I expected individuals low in self-competence to report higher levels of public-speaking ability in the directed abstraction condition than in the control condition.
Study 1a

Methods

Participants

One hundred and three native English-speaking OSU undergraduates (51 women, 52 men) participated for partial course credit in an introductory psychology course. Because the study relied on false feedback, seven participants were excluded for expressing clear, strong, and consistent suspicion of the success feedback during debriefing. The final sample included 96 participants (49 women, 47 men).

Overview of Procedure

Participants first completed a measure of self-esteem (SE) during a departmental mass-testing session. They then signed up for a study on “Intuitive Perception and Estimation ability”. Participants took a test to measure this ability, received success feedback, and then completed either the concrete (control) or directed abstraction writing tasks. Participants then reported how well they believed they would do on similar intuitive estimation tasks, the degree to which they believed they possessed high levels of intuitive perception and estimation ability, and additional measures. Participants were then probed for suspicion and debriefed, with care taken to ensure that they understood the test feedback had been unrelated to their actual performance.
Self-esteem

Self-esteem (SE) was measured during an online mass-testing session one to nine weeks prior to the main study session. During this pre-testing session participants completed, among other measures for other unrelated studies, the 10-item Rosenberg Self-Esteem scale (Rosenberg, 1965). Participants responded on a 6-pt scale from 1 (disagree very much) to 6 (agree very much) to items such as “I wish I could have more respect for myself” (reverse scored) and “I feel that I have a number of good qualities” (α = .69). Participants from this pre-testing session were invited to take part in a study on “Intuitive Perception and Estimation ability”. While participants may have inferred that they were invited to the study because of the measures they completed in the pre-screening session, they had no way of knowing that I was specifically interested in their self-esteem scores.

Success feedback

Upon arriving to the lab, participants were told that the experimenters wanted to know more about people who had varying levels of Intuitive Perception and Estimation, an ability said to relate to how well one can quickly and accurately grasp information and translate such information into snap judgments, particularly concerning quantity. Participants read a description of Intuitive Perception and Estimation ability and were told they would take a test to measure this ability and then answer some questions. During the test, participants saw a series of 20 screens, each containing between 50 and 150 yellow dots on a blue background, for 3 seconds each (loosely based on that used by Tajfel, Billig, Bundy, & Flament, 1971). Each trial was preceded by a 1-second fixation
point in the center of the screen. After each trial participants were shown a target number and were asked to judge whether they had seen more or fewer dots than the target number. Prior to the test participants were instructed to rely on their intuition and respond quickly, and that they should rely on their gut feeling rather than try to count the dots. To avoid effects of prior self-knowledge or stereotypes, participants were told that the ability being measured was unrelated to math skills or to gender. After the last trial and a brief loading screen all participants saw a screen with the following: “Score: 16/20; Percentile ranking: 92\textsuperscript{nd}; Class: Very High”.

To enhance the impact and believability of the feedback, participants were asked to write down their scores on a sheet of paper on their desk that contained four scores, allegedly from prior participants, all in different handwritings and all lower than that of the participant. Prior to beginning the test, the experimenter explained that the test program had not been recording participants’ scores reliably, and so to get around the problem participants should jot down their scores and then enter them when prompted several screens later in a different program. After participants wrote down their score and clicked the “continue” button, the computer appeared to switch programs, and participants were asked to enter their score in the “new” program.

*Directed abstraction manipulation*

After entering their scores, participants were asked to spend several minutes responding to one of two essay prompts. In the concrete condition, the writing prompt read: “You indicated you received a *Very High* score on the Intuitive Perception and Estimation ability test. Describe HOW you completed the test. What did you do?”
that the prompts were designed to appear as if the computer program used the score they entered previously to fill in a blank with “*Very High*”. The prompt in the directed abstraction condition read: “You indicated you earned a *Very High* score on the Intuitive Perception and Estimation ability test. Explain WHY you were able to achieve a *Very High* score. (Begin by completing the sentence stem below.) ‘I was able to achieve a *Very High* score on the test because I am:’

Predictions scale

Participants read short descriptions of ten situations requiring intuitive perception or estimation, such as guessing the number of jelly beans in a jar or quickly finding a puzzle piece of a particular color among pieces of other colors. For each situation, participants answered the question “How well would you do?” on a scale from 1 (Very bad) to 9 (Excellent). The ten items were averaged into a mean Predictions score ($\alpha = .69$).

Ability scale

Participants then read seven statements indicative of having high Intuitive Perception and Estimation ability, and for each statement chose a response from 0 (not at all true of me) to 10 (very true of me). These items were loosely based on Schwarzer and Jerusalem’s (1995) Generalized Self-Efficacy measure, and included “It is easy for me to quickly ‘size up’ a new situation, object, or task” and “When estimating things (quantity, distance, time) I can rely on my intuition and do well.” The seven items were averaged to produce a mean Ability score ($\alpha = .80$).
Additional measures

Additional measures included a state measure of self-competence (Heatherton & Polivy, 1991), a small number of exploratory items (e.g. judgments of the importance of Intuitive Perception and Estimation ability, interest in taking the test again, perceptions of accuracy of the test feedback), and demographic information. None of these additional variables were affected by condition or the condition-by-SE interaction, so they will not be discussed further.

Results

Predictions scale

I conducted a hierarchical linear regression in which scores on the Predictions scale were regressed onto Condition (Concrete coded as 0 and Abstract as 1) and standardized SE in Step 1, with the interaction term added in Step 2. The Step 1 predictors were both non-significant (ts < 1), suggesting that neither Condition nor SE had un-moderated effects on Predictions scores. Unfortunately, the predicted interactive effect of Condition and SE, entered in Step 2, was also absent (t < 1).

Ability scale

I conducted a similar hierarchical linear regression in which I regressed scores on the Ability scale onto Condition (Concrete coded as 0 and Abstract as 1) and standardized SE in Step 1, and added the interaction term in Step 2 (see Table 1). In Step 1, neither Condition nor SE predicted scores on the Ability scale (ts < 1). However, adding the Condition by SE term in Step 2 revealed the expected interaction (b = -.49, t (92) = -2.11, p < .05; see Figure 1), which I probed using the MODPROBE macro for SPSS (Hayes &
Matthes, 2009). This analysis showed that, as expected, for participants relatively low in SE (-1 SD below the mean) being in the Abstract condition led to higher scores on the Ability scale (b = .64), and this simple effect nearly reached the conventional level of significance, t(92) = 1.95, p < .06. For participants relatively high in SE (+1 SD above the mean), condition had no effect on Ability scores, b = -.33, t(92) = 1.03, p > .30.

Discussion

Results from Study 1a were promising. I found the predicted pattern of results for one of the dependent measures, the Ability scale. Specifically, after being told they performed well on a test measuring an intuitive ability, low self-esteem participants who were then prompted by the directed abstraction manipulation to explain why they succeeded in abstract, personal, and positive terms came to view themselves as having higher levels of this intuitive ability than did their low self-esteem counterparts who received the concrete writing prompt. As expected, the writing manipulation had no effect on the ability self-ratings of those high in self-esteem, who I reasoned would infer a personal ability from their success spontaneously regardless of which writing condition they were in.

However, I found no effects on the other primary dependent measure, the Predictions scale, indicating that the manipulation had no effect on participants’ predicted performance in hypothetical future situations that might require intuitive perception and estimation ability. The Predictions scale can be thought of as an indirect measure of participants’ perceived ability levels. I initially thought this measure would be less reactive for participants low in self-esteem, who I reasoned would be hesitant to draw
explicit positive conclusions about themselves but might more readily concede that they would perform well on specific tasks in the future. Thus I surmised that the Predictions scale might show greater effects than the Ability scale, which asks participants more directly about their abilities. However, in retrospect, it is not surprising that the more direct measure of ability, the Ability scale, was more effective in capturing self-concept change than the less direct Predictions scale, which required participants to make more distant inferences (“I did well on the test, therefore I have this ability, and therefore I would also do well on these other tasks requiring this ability”) and is also farther removed from the construct of interest, perceived ability.

Another potential problem was the generally weak relationship between self-esteem and each of the two dependent measures (the Predictions and Ability scales), as evidenced in the regression analyses. I reasoned that perhaps self-esteem as a measure is too broad. The self-concept has many aspects, from general evaluations of one’s social value (Leary & Baumeister, 2000) to beliefs about one’s generalized efficacy in controlling crucial aspects of one’s environment (Bandura, 1977), and theorists have considered both to be aspects of self-esteem (e.g. Tafarodi & Swann, 2001; Heatherton & Polivy, 1991). I thus sought to replicate and improve upon the initial success of Study 1a by using a more specific moderator variable, the self-competence subscale of Tafarodi and Swann’s (2001) Revised Self-Liking/Self-Competence measure of self-esteem. I hypothesized that, following a success experience, directed abstraction would lead participants chronically low in beliefs about their self-competence to predict greater success in the future and to report higher levels of the ability thought to underlie the
success, compared to low self-competence participants in a control condition in which they described their success concretely. I expected no effects of directed abstraction for participants with high self-competence beliefs; rather, I hypothesized that these individuals would predict future successes and report high ability levels regardless of condition.
Study 1b

Methods

Participants

Ninety-one native English-speaking OSU undergraduates (54 women, 37 men) participated for partial course credit in an introductory psychology course. I excluded from analysis five participants who expressed clear, strong, and consistent suspicion of the success feedback during debriefing, leaving a final sample of 86 participants (52 women, 34 men).

Overview of Procedure

The procedure was identical to that followed in Study 1a, except that instead of the Rosneberg Self-Esteem Scale (Rosenberg, 1965) participants completed a self-competence scale (Tafarodi & Swann, 2001) before being invited to the study. As before, participants received success feedback following a test they were told measured Intuitive Perception and Estimation ability. They then completed either the concrete (control) or directed abstraction writing tasks. The primary dependent measures were again ratings of how well they would do on similar intuitive estimation tasks (Predictions scale, $\alpha = .83$) and the degree to which they believed they had high levels of the ability in question (Ability scale, $\alpha = .88$). Participants were probed for suspicion and debriefed. Full details can be found in the previous section describing Study 1a.
Self-competence (SC)

The 8-item self-competence subscale of Tafarodi and Swann’s (2001) Self-Liking/Self-Competence Scale – Revised was administered during a mass-testing session that participants completed online anywhere from several days to three weeks prior to their participation in the rest of the study. Participants responded from 1 (strongly disagree) to 5 (strongly agree) to items such as “I sometimes deal poorly with challenges” (reverse scored) and “I am highly effective at the things I do” (α = .78).

Results

Predictions scale

I conducted a hierarchical linear regression in which scores on the Predictions scale were regressed onto Condition (Concrete coded as 0 and Abstract as 1) and standardized SC in Step 1, with the interaction term added in Step 2 (see Table 2). Although Condition had no overall effect ($t < 1$), higher SC scores predicted higher scores on the Predictions scale, $b = .25$, $t(83) = 2.44$, $p < .05$. The Condition by SC interaction term entered in Step 2 was marginally significant ($b=.38$, $t(82) = 1.86$, $p < .07$; see Figure 2). Probing the interaction revealed no significant effects of Condition for participants either low ($b = .43$) or high ($b = -.33$) in SC, $ps > .14$. However, for participants in the Concrete condition, higher SC scores led to higher Predictions scores ($b = .46$, $t(82) = 3.04$, $p < .01$), whereas this relationship between SC and Predictions scores was absent for participants in the Abstract condition ($b = .08$, $t < 1$).
Ability scale

Next I conducted a similar hierarchical linear regression for Ability self-ratings, regressing scores on the Ability scale onto Condition (Concrete coded as 0 and Abstract as 1) and standardized SC in Step 1, adding the interaction term in Step 2 (see Table 3). In Step 1, Condition significantly predicted Ability scores, such that participants in the Abstract condition scored higher than those in the Concrete condition (b = .56, t(83) = 2.14, p < .05). Also, higher SC predicted higher Ability scores (b = .59, t(83) = 4.52, p < .001). Adding the interaction term in Step 2 revealed the expected interaction (b = -.55, t(82) = -2.17, p < .05; see Figure 3). Simple effects analysis showed that being in the Abstract condition led to higher Ability scores for participants relatively low in SC (b = 1.12, t(82) = 3.08, p < .01), but had no effect on those high in SC (b = .002, t < 1). SC was a significant predictor of Ability scores both for those in the Concrete (b = .90, t(82) = 4.70, p < .0001) and Abstract (b = .34, t(82) = 1.99, p < .05) conditions.

Discussion

Results from Study 1b supported the hypotheses. Overall, a pattern emerged such that participants low in self-competence who receive evidence of having high Intuitive Perception and Estimation ability only report having high levels of this ability if, following their success, they are prompted to explain why they succeeded using positive and personally-relevant language. Unlike Study 1a, which found evidence of this pattern for self-rated ability levels but not predictions of future performance, Study 1b showed evidence for the pattern for both types of self-judgments. However, the hypothesized pattern was much clearer and more statistically robust with regard to the ability self-
ratings. It may be the case that the ability measure is more direct and, as such, is a better indication of self-concept change than predicted behavioral success in imagined future scenarios.

Replacing self-esteem (Study 1a) with self-competence (Study 1b) yielded much stronger results. Indeed, averaging across conditions, SC was significantly associated with both Predictions and Ability scores, whereas SE had not been significantly associated with either measure. In addition to these overall effects, SC interacted with Condition to predict Ability scores (significantly) and Predictions scores (marginally) to produce the hypothesized pattern of results, whereas SE only did so (and marginally, at that) for Ability scores.
Combined Analysis

Because Studies 1a and 1b were identical in their experimental procedures except for which scale, SE or SC, was administered during an earlier pre-testing session, and in order to clarify the overall pattern of results, I next conducted a combined analysis. That is, I combined the two datasets into a single dataset with 182 participants (101 women, 82 men). Standardized SE and standardized SC scores were merged into one variable, SE/SC. A new dummy variable, Study, was created to denote which study participants were in, and thus whether for each participant the SE/SC score represented SE or SC (Study 1a/SE coded as 0, Study 1b/SC coded as 1). I then tested whether the hypothesized Condition by SE/SC interactions would be apparent in this larger sample, whether this interaction would be moderated by which Study participants were in, and whether the effects of SE/SC on the dependent variables would be moderated by Study (or by whether SE or SC was being used).

Results

Predictions scale

Prediction scores were regressed onto Condition (concrete coded as 0, abstract as 1), standardized SE/SC, and Study (1a coded as 0, 1b as 1) in Step 1 of a hierarchical linear regression model, followed by the three 2-way interaction terms in Step 2 and the 3-way interaction in Step 3. Step 1 revealed only an effect of SE/SC, such that those
higher in SE or SC scored higher on the Predictions scale \( (b = .15, t(178) = 2.46, p < .05) \). When the 2-way interactions were added in Step 2 a marginal Condition by SE/SC effect emerged \( (b = -.21, t(175) = 1.66, p < .10) \), indicating that the effect of Condition on Predictions scores decreased as SE/SC increased. Simple effects analysis confirmed that there was a non-significant trend for low SE/SC participants (-1 SD below the mean) in the Abstract condition to score higher on the Predictions scale than low SE/SC participants in the Concrete condition \( (b = .29, t(175) = 1.37, p < .18) \), but no such trend was detected for participants high in SE/SC (1 SD above the mean, \( t < 1 \)). There was also a trend toward a Study by SE/SC effect \( (b = .19, t(175) = 1.54, p = .12) \) such that SE/SC had a greater effect on Predictions scores in Study 1b (when the variable represented SC) than in Study 1a (when the variable represented SE). The effect of the 3-way interaction, added in Step 3, did not approach significance \( (p > .20) \).

**Ability scale**

I used the same hierarchical model to predict Ability scores, with the single factors entered in Step 1, the 2-way interactions in Step 2, and the 3-way interaction in Step 3. In Step 1 there was a significant effect of SE/SC \( (b = .29, t(178) = 3.31, p < .01) \) and a marginal effect of Condition \( (b = .32, t(178) = 1.79, p < .08) \), indicating higher Ability scores for participants higher in SE or SC and for participants in the abstract condition. Step 2 revealed two significant 2-way interactions. First, Condition interacted with SE/SC \( (b = -.52, t(175) = 3.04, p < .01) \), such that being in the Abstract condition had a more positive effect on Ability scores as SE/SC decreased. Simple effects analysis confirmed that for participants low in SE/SC (-1 SD below the mean), being in the
Abstract condition predicted higher Ability scores than being in the Concrete condition (b = .68, \( t(175) = 2.33, p < .05 \)), whereas the effect was absent for participants high in SE/SC (1 SD above the mean, b = -.36, \( t(175) = 1.24, p > .20 \)). Second, Study interacted with SE/SC (b = .58, \( t(175) = 3.40, p < .01 \)), indicating a greater effect of SE/SC on Ability scores in Study 1b (SC) than in Study 1a (SE). Entering the 3-way interaction in Step 3 did not explain any additional variance in Ability scores (\( t < 1 \)).

**Discussion**

Overall, the results from the combined analysis were consistent with predictions. Across both studies the expected 2-way interaction emerged, showing that the experimental manipulation had more of an effect on participants’ self-concepts for those low in self-esteem or self-competence than for those high in these traits. The pattern was statistically robust for judgments of one’s ability, and less robust for predictions of one’s future performance on tasks related to the ability. Another 2-way interaction was apparent, in which self-competence in Study 1b was more strongly related to the outcome measures than was self-esteem in Study 1a. This finding supports the decision to use a scale designed specifically to measure beliefs about one’s competence rather than an overall evaluation of one’s self-worth. It appears that self-competence is more directly related to one’s reactions to a success experience and to one’s judgments of self-competence in a specific domain (the Ability scale) than is an overall self-evaluation. Again, this pattern was more reliable for the Ability scale than for the Predictions scale.

Given the stronger support for the experimental hypotheses in Study 1b than in Study 1a, one might have expected a 3-way interaction between Study, Condition, and
SE/SC, especially for the Predictions scale. The fact that this interactive effect was either absent or too weak to detect indicates that participants were not behaving in radically different ways in the two studies, but rather that the pattern I found was simply stronger and clearer in Study 1b than in Study 1a. The analysis in Study 1b might also have had more power than in Study 1a due to self-competence accounting for more error variance than did self-esteem (as indicated by the Study by SE/SC interactions).
Study 2

In the first two studies, directed abstraction led participants with negative self-views to draw more positive conclusions about their abilities following a success. I next sought to test this social influence technique in a different domain, public speaking, and with an internet sample rather than an undergraduate sample. Additionally, I wanted to determine whether directed abstraction can be used not just immediately following a success, but also with regard to a success from the more distant past that one has been instructed to recall. Finding that directed abstraction can reshape low self-competent individuals’ self-concepts in an important life domain (public speaking), and with respect to a self-generated memory of a past success rather than immediately following an experimentally-induced success, would further establish the power and real-world utility of this technique. I predicted that applying the directed abstraction manipulation to a memory of a past public speaking success would lead individuals low in self-competence to draw positive conclusions about their abilities, their future performance, and their attitudes toward public speaking, relative to a concrete control group.

Methods

Participants

Seventy users (39 women, 31 men) of Amazon’s Mechanical Turk website participated in exchange for $.50. Mechanical Turk allows users to complete tasks posted
by requesters for monetary compensation. Although social science experiments are only a subset of the tasks available to users of the site, social psychology researchers are using the site in increasing numbers and report collecting high-quality data (Buhrmester, Kwang, & Gosling, 2011). However, online data collection affords researchers less control over participants than does a lab study, and quality control is a concern. The current sample of 70 participants included native English-speakers who passed a battery of screening measures. Only Mechanical Turk users who reside in the US and whose work had been approved for at least 95% of previous tasks they had completed on the site were allowed to complete the study. I included measures to identify users who reported having completed an earlier pilot version of the same study, who admitted to leaving the survey page to do other things during the 3-minute writing period, or who failed to respond appropriately to an attention check item that appeared at the end of a scale (“Please select “Somewhat Agree” if you are still reading the questions at this point.”). These users were paid but were not included in the analyses. Because I was interested in participants’ responses to success experiences, I also excluded six participants who rated the experience they recalled and wrote about below the midpoint (labeled “Somewhat Successful”) of a 9-pt success scale. The resulting sample was quite diverse in age (M = 32, SD = 11, ranging from 18 to 77) and somewhat diverse in ethnicity (52 participants, or 74%, described themselves as both White and non-Hispanic).

Overview of Procedure

Participants who chose to participate in a study on “past experiences and writing” were rerouted to the survey website Qualtrics. They then completed pre-measures of self-
competence and past public speaking experience and ability. Next, participants thought of the last time they had spoken in public, answered several questions about the experience, and completed either a concrete or abstract writing task regarding the recalled experience. After this manipulation, they completed a series of dependent measures focused on attitudes toward public speaking, predicted future speaking performance, and speaking ability. After providing demographic information, they were debriefed and paid.

Self-competence

Participants first completed a 4-item version of the self-competence (SC) measure used in Study 1b (Tafarodi & Swann, 2001). The items were selected from the full scale based on their high item-total correlations in Study 1b and a balance of positively and negatively-worded items (2 each). Participants responded from 1 (strongly disagree) to 5 (strongly agree) to each of the four statements (α = .65).

Past Effectiveness and Experience pre-measures

Participants indicated their level of agreement with the items “In the past, I have been generally effective at public speaking” and “I have a lot of public speaking experience” on a 5-item scale from 1 (strongly disagree) to 5 (strongly agree).

Recalling a public speaking event

The next screen displayed instructions asking participants to “think of the last time you spoke in public to at least a small group of people” and to type a short phrase labeling the event in a response box. Examples provided included giving a slide presentation at work or school or delivering a toast at a wedding. The phrase that each participant typed then appeared at the top of the next page, followed by three questions
about the event, each on a 9-pt scale: “How long ago did this happen?” anchored at 1 (within the past week) and 9 (more than 10 years ago), “How successful were you?” anchored at 1 (not at all successful) and 9 (very successful), and “How easy was it for you to recall this event?” anchored at 1 (very difficult) and 9 (very easy). Only six participants scored below the midpoint of the success scale, and these participants were excluded from the final sample.

Directed abstraction manipulation

Participants were randomly assigned to either a concrete or directed abstraction exercise, except that the success scale was divided into segments and in each segment, approximately equal numbers of participants were assigned to each condition. This method served to ensure participants were writing about roughly equally successful events in each condition. Participants were then asked to spend three minutes thinking and typing in response to one of the two writing prompts. In the concrete condition the prompt read, “Describe HOW you were able to do well at this. What did you do?” The abstract condition read, “Explain WHY you were able to achieve such a successful performance. Begin by completing the sentence stem below. ‘I was able to achieve a successful performance because I am...’” In both conditions the screen stayed on the writing page for three minutes and then advanced automatically to the next page.

Attitudes toward public speaking

The first dependent measure was attitudinal and consisted of six items (overall $\alpha = .88$), three dealing with enjoyment of public speaking ($\alpha = .93$) and three dealing with its perceived importance ($\alpha = .87$), answered on 9-pt scales with opposite endpoints.
Representative items included “I think giving a speech in public is… (frightening/exciting)” and “I feel that having public speaking skills is… (worthless/worthwhile)”. Although differing in content (enjoyment vs. importance), the two 3-item scales were positively correlated ($r = .53$, $p < .001$) and showed similar patterns of correlations to other measures, so the six items were treated as a 6-item scale ($\alpha = .88$) and averaged into a single index of attitudes toward public speaking.

**Predictions scale**

Participants were then asked to imagine themselves in each of four public speaking scenarios: giving a short presentation to a boss and several managers, delivering a 3-minute toast at a friend’s wedding reception, giving a class presentation, and introducing a guest speaker. Participants indicated how well they thought they would do on each task on a 9-pt scale from 1 (very poorly) to 9 (very well). The four items were averaged to produce a mean Predictions score ($\alpha = .84$).

**Ability scale**

Participants indicated their level of agreement with three statements regarding their public speaking ability: “Overall, I am good at public speaking”, “When forced to speak in public without any time to prepare, I can still do well” and “It is easy for me to speak in public if I have had time to prepare myself”. For each statement, participants responded on a 7-pt scale from 1 (strongly disagree) to 7 (strongly agree). The three items were averaged to produce a mean Ability score ($\alpha = .89$).
Quality control measures and demographics

At the end of the Ability scale was an item that read “Please select ‘Somewhat Agree’ if you are still reading the questions at this point” that served to identify participants who were responding randomly or thoughtlessly. Then participants answered demographic items, indicated whether they were native English speakers, indicated whether they had participated in previous pilot versions of the study that had appeared on Mechanical Turk (even though the study description asked users not to participate if they had done an earlier version), and indicated whether they left the survey page or did anything other than think and write during the three minutes they were forced to stay on the essay page before continuing. (For these last two questions, participants were assured that their answers would not affect their payment.)

Debriefing and payment

Participants were then taken to a page containing a full debriefing. At the bottom of the page was a 5-digit code. They were instructed to leave the survey website, return to the Mechanical Turk website, and enter the code in a response box to receive their payment.

Results

Characteristics of the recalled events

As expected, there was virtually no difference between how successful participants rated their recalled public speaking events in the Concrete (M = 7.13, SD = 1.47) and Abstract (M = 7.11, SD = 1.49) conditions (t < 1), as equal numbers of participants had been specifically assigned to the two conditions at each point on the
success scale. Both groups recalled events that occurred equivalently far in the past (Concrete $M = 3.97$, $SD = 1.59$; Abstract $M = 4.29$, $SD = 2.05$; $t < 1$), on average between three and six months prior to the study. However, participants in the Concrete condition reported that it was easier to recall the event ($M = 7.63$, $SD = 1.47$) than did participants in the Abstract condition ($M = 6.82$, $SD = 1.60$; $t(68) = 2.21$, $p < .05$). Because the event was recalled and the Ease judgments made prior to the experimental manipulation, this difference reflects a failure of random assignment rather than an effect of the writing manipulation.

Correlations between ratings of success, ease of recall, how long ago the event occurred, and other relevant pre-measures and dependent measures are reported in Table 4. While how long ago the recalled speech event occurred did not correlate significantly with any other measure, ease of recall and, especially, perceived success of the event recalled did correlate positively with other pre-measures and dependent variables. In addition, as can be seen in Table 4, Past Effectiveness and Experience with public speaking correlated highly with the dependent measures. I accordingly included Past Effectiveness, Experience, and Success as covariates in the rest of the analyses.  

Because of the failure of randomization concerning Ease of Recall, it was unclear whether or not to control for this variable in the analyses to follow. Since Ease of Recall...
was higher for Concrete participants than for Abstract participants, and was positively correlated with the dependent measures, it seemed possible that controlling for it in the analyses would bias the results toward showing positive effects of being in the Abstract condition. Therefore, in order to provide the most conservative hypothesis test, I did not control for Ease of Recall in the analyses reported. (In no cases did controlling for Ease of Recall change the critical interactions of Condition and SC from non-significant to significant or vice-versa.)

*Attitudes toward Public Speaking*

A hierarchical regression model was constructed to predict participants’ Attitudes scores. Condition (concrete coded as 0, abstract as 1) and standardized SC were entered in Step 1, along with the standardized control variables Success, Past Effectiveness, and Experience. In Step 2 I added the Condition by SC interaction term. Step 1 revealed significant positive effects of all three control variables (Success, \(b = .44, t(64) = 2.89, p < .01\); Past Effectiveness, \(b = .73, t(64) = 3.83, p < .001\); Experience, \(b = .43, t(64) = 2.46, p < .05\), but no effect of Condition \((t < 1)\) and a marginal trend toward a negative effect of SC \((b = -.22, t(64) = 1.68, p < .10)\). The Condition by SC interaction term added in Step 2 was non-significant \((t < 1)\).

*Predictions scale*

A similar hierarchical regression model was constructed to predict scores on the Predictions scale. Condition (concrete coded as 0, abstract as 1) and standardized SC were entered in Step 1, along with the standardized control variables Success, Past Effectiveness, and Experience. In Step 2 I added the Condition by SC interaction term.
Step 1 revealed significant positive effects of two of the control variables (Success, $b = .48$, $t(64) = 3.34, p < .01$; Past Effectiveness, $b = .54$, $t(64) = 2.97, p < .01$) and a marginal effect of the other (Experience, $b = .31$, $t(64) = 1.84, p < .07$), but no effects of Condition or SC ($t$s < 1). Again, the Condition by SC interaction term added in Step 2 was non-significant ($t < 1$).

**Ability scale**

I regressed the final dependent measure, the Ability scale, onto the same Step 1 and Step 2 variables as for the previous dependent measures. Step 1 revealed significant positive effects of two of the control variables (Past Effectiveness, $b = .84$, $t(64) = 6.39, p < .001$; Experience, $b = .32$, $t(64) = 2.66, p < .05$), no effect of Success ($b = .13$, $t(64) = 1.28, p > .20$) or SC ($t < 1$), and a marginal positive effect of Condition ($b = .32$, $t(64) = 1.87, p < .07$). However, this time the critical Condition by SC interaction term added in Step 2 was significant ($b = -.37$, $t(63) = 2.17, p < .05$; see Table 5 and Figure 4). Simple effects analysis revealed the predicted pattern. For participants low in SC (-1 SD below the mean), being in the Abstract condition led to higher Ability scores than being in the Concrete condition ($b = .70$, $t(63) = 2.90, p < .01$). However, for participants high in SC (1 SD above the mean), condition had no effect on Ability scores ($b = -.03, t < 1$).

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3 This model includes Success, Past Effectiveness, and Past Experience as covariates, and does not include Ease of Recall. If Ease is controlled for, the interaction is basically unchanged, becoming stronger if anything. Likewise, Past Experience and Effectiveness can both be removed without significantly altering the results. Only if all covariates are removed does the interaction term fail to reach conventional levels of significance, although in this case, again, the basic pattern of results remains unchanged: participants low in SC (-1 SD) report higher Ability scores in the Abstract condition ($p < .05$), whereas for participants high in SC (+1 SD) condition has virtually no effect.
Discussion

The results of Study 2 provided a conceptual replication of the main finding from Studies 1a and 1b. Participants low in self-competence who were prompted by the directed abstraction manipulation to consider a prior success in abstract and personally relevant terms later rated themselves higher in the ability thought to underlie their success, relative to participants prompted to describe their performance concretely. As before, this effect was quite apparent for participants low in general self-competence beliefs, and absent for those high in self-competence beliefs.

I also showed that the power of directed abstraction to reshape the self-concept is not restricted to specific lab conditions. In Studies 1a and 1b, undergraduate participants completed the framing exercise with regard to a very controlled success experience that had occurred just moments before. This success had implications for a somewhat novel ability, Intuitive Perception and Estimation, and it is not completely clear that this ability had much real-world relevance for participants. In Study 2, I asked a much more diverse sample of online participants to recall a prior real-life occasion in which they spoke in public. Although some participants recalled an event from the past week, others recalled events from more than 10 years prior to the study. In addition, public speaking ability is generally considered an important life skill that is relevant to success in many areas, both personal and professional. Study 2 thus represents an important extension of the previous findings regarding directed abstraction, demonstrating that this brief intervention can be used as a powerful social influence technique in a variety of success scenarios, both immediately following the success and some time afterward.
The expected pattern of results was only found for participants’ judgments of their overall public speaking ability. There were no effects in Study 2 on participants’ attitudinal judgments of how enjoyable and important public speaking ability is. There were also no effects on participants’ predictions of how well they would perform in future hypothetical speaking situations. This pattern is consistent with the findings from Studies 1a and 1b. Judgments about one’s ability showed the expected effects in both prior studies, but the effects on predicted future performance were found in Study 1b but not 1a. It may be the case that generalizing from a success to a stable, personal ability is the first step in a chain of events that later leads to generalizations to future performance and to changes in attitudes relevant to the success, and it is only under the most favorable conditions that over the course of a 10 to 30-minute study I would find all three effects.
General Discussion

Individuals with negative beliefs about their overall competence resist drawing favorable conclusions about themselves from a success experience. In some cases, this resistance results in the perseverance of maladaptive, overly negative self-views. For instance, an individual with a phobia may successfully deal with the object of his phobia during exposure treatment, yet fail to generalize from that success to other situations involving the phobic object, resulting in a return of fear. Likewise, an individual with low self-esteem may receive a sincere compliment from her romantic partner, yet fail to generalize from that compliment to the relationship as a whole, leading her to engage in self-protective behaviors that hurt the relationship. In these examples, each individual would be better served by viewing the experience in terms of its broader implications, rather than as an isolated case with no real generalizability.

Directed abstraction is a social influence technique that encourages broad generalizations from a success among those individuals who are least likely to spontaneously make such generalizations (i.e. individuals low in self-competence beliefs). Across three studies, the directed abstraction manipulation led these individuals to report higher levels of an ability thought to underlie a behavioral success that had either just occurred (Studies 1a-1b) or been recalled from past experience (Study 2). In
support of this interpretation, the manipulation had no reliable effects on participants who entered the studies with high self-esteem or self-competence beliefs.

The directed abstraction manipulation produced the predicted pattern of results for the most direct measure of self-concept change included in each study. In Studies 1a-1b, in which participants received positive feedback about their Intuitive Perception and Estimation ability, this measure was a scale made up of statements to which agreement would indicate high levels of the intuitive ability. In Study 2, in which participants recalled a public speaking success, this measure instead included statements that indicated high levels of public speaking ability. These two Ability scales consistently confirmed predictions, showing a positive effect of the directed abstraction manipulation only for participants low in self-esteem or self-competence. On the other hand, what I termed “Predictions” scales, ones that asked participants to predict how well they would do on related future tasks, showed the predicted pattern of results in Study 1b, but not in Study 1a or Study 2. Although only Study 2 contained an attitude measure (ratings of how enjoyable participants found public speaking and how important they thought public speaking ability was), there was no evidence of attitude change following directed abstraction. Across studies, then, scales designed to measure direct ability inferences showed the expected results, while scales designed to measure generalizations to future successes or to attitudes remained unaffected by the manipulation.

This pattern is perhaps not surprising, given that the directed abstraction technique prompts participants to directly consider ability explanations for their success. Participants’ scores on the Ability scales should reflect the extent that these ability
explanations are accepted and internalized by participants. In contrast, the Predictions and Attitudes scales required participants to go one step further, inferring from their presumed high ability levels that they would do well on various other tasks or that they had more positive attitudes toward a relevant domain. Over time, accepting that one has high levels of an ability should naturally lead to more favorable predictions about one’s future performances in relevant domains, but it may have been unrealistic to expect participants to make these multi-step generalizations in such a short amount of time. Likewise, feeling more positively about one’s ability should eventually lead to more positive evaluations of the associated performance domain, but the timeline of the current studies may have simply been too short to capture these later steps in the proposed chain of inferences.

The current directed abstraction manipulation probably works through two distinct processes. First, it leads participants to consider the success event at an abstract level. According to construal-level theory, abstract, high-level construals emphasize meaning and connect an event to broader networks of knowledge, whereas concrete, low-level construals emphasize specific characteristics of an event that need not generalize beyond the current situation (Trope & Liberman, 2010). For instance, the same action might be identified concretely as “turning a key” or abstractly as “securing one’s property” (Vallacher & Wegner, 1989). By asking participants to “explain WHY” rather than “describe HOW” they completed a task, abstract reframing draws on previous work using why and how explanations to induce abstract and concrete construal-level mindsets, respectively (Freitas, Gollwitzer, & Trope, 2004). Further, like previous reframing work
(Marigold et al., 2007, 2010), abstract reframing draws heavily on the Linguistic Category Model (Semin & Fiedler, 1988), which suggests that adjectives and nouns are more abstract than concrete and state verbs. Thus, the sentence stem completion aspect of the manipulation (“I was able to achieve such a successful performance because I am:”) tended to elicit abstract language such as adjectives and nouns, whereas the wording of the concrete condition (“What did you do?”) elicited mostly action verbs. Not surprisingly, then, directed abstraction has a strong component of abstraction.

However, the current manipulation is not simply an abstraction manipulation. It also employs positive language that presupposes two things: that participants succeeded, and that their success is attributable to an ability. Research shows that the questions one asks influence the answers one receives (Bock, 1977; Semin, Rubini, & Fiedler, 1995; DePoot & Semin, 1995). In the current study, participants in the abstract condition were asked to explain why they “were able to achieve such a successful performance”. It is difficult to answer this question without implicitly accepting, first, that one’s performance was successful, and second, that at least the proximal cause of one’s success was something internal to oneself. In addition, the sentence stem “I was able to achieve such a successful performance because I am:” is hard to complete without attributing one’s success to stable, internal factors. The concrete condition contained no such presuppositions, and thus participants were left to either draw their own conclusions about what caused their success, or to not even consider the question of causality. Positive presuppositions, then, play a critical role in directing participants toward a specific type of abstract generalization.
An abstraction manipulation alone, without any constraint to answer positively, might even backfire for the very participants the current manipulation targets most effectively. Individuals with low self-esteem or low self-competence can be thought of as having well-developed knowledge structures in which the self is associated with negativity or incompetence. A manipulation that only induces abstraction might activate these existing meaning networks and the associated negative self-views. Can a single success experience hope to compete with this existing negative self-knowledge without some additional reframing measures? Several findings indicate that the answer is no. One large body of work has examined the impact of visual perspective on self-concept change, although this work has generally dealt with failure rather than success. Picturing an event from the 3rd-person perspective induces high-level, abstract construals relative to picturing the same event from the 1st-person perspective (Libby, Shaeffer, & Eibach, 2009). Relevant to the current discussion, picturing a failure from the 3rd-person perspective causes participants with low self-esteem to generalize more from their failure and to experience more shame than either participants with high self-esteem or those who picture the failure from a 1st-person perspective (Libby, Valenti, Pfent, & Eibach, 2011). Other findings indicate more broadly that the 3rd-person perspective leads individuals to consider an event in light of their more abstract self-knowledge (Libby & Eibach, 2011), strongly suggesting that simply asking participants to explain why they succeeded (without including language that presupposes that the answer will be a positive generalization to the self) could backfire for participants low in self-esteem.
On the other hand, explaining why emotionally evocative events occurred tends to reduce their subsequent emotional impact (Wilson & Gilbert, 2008). A similar meaning-making induction, self-distancing, asks participants to consider an emotionally distressing experience from a distanced perspective, that of a “fly on the wall” (Kross & Ayduk, 2011). This manipulation, which contains elements of abstraction and also employs 3rd-person visual imagery, effectively dulls emotional reactivity to an event. Although these methods are typically used to reduce negative affect in response to distressing events, the analogous prediction in terms of success would be that simply explaining why one succeeded would reduce the impact of that success on the self-concept. This work may seem to contradict the evidence cited earlier that 3rd-person visual imagery makes individuals with low self-esteem more emotionally reactive to personal failures (Libby et al., 2011). A discussion of the differences and similarities between these two manipulations, and the circumstances in which they are employed, is beyond the scope of this paper. The important point is that neither effect (decreasing the emotional impact of an event or highlighting existing self-knowledge structures relevant to the event) would achieve the current goal of positive self-concept change for individuals with negative self-views following a success. As such, abstraction in general cannot be expected to produce the effects that I have demonstrated using the directed abstraction manipulation. Of course, future work should test this possibility by pitting directed abstraction against an undirected abstraction manipulation that does not include any of the positive presuppositions that I believe are essential to the success of the current manipulation.
Future work should also address possible behavioral effects of this manipulation. For instance, would participants who abstractly reframe a successful speech performance experience less anxiety and actually perform better during a second speech? Would these effects occur after a substantial time lag, perhaps of several weeks? Marigold and her colleagues (2010) demonstrated that their reframing technique led participants low in self-esteem to engage in more positive relationship behaviors over the two weeks following the manipulation. Further, these participants’ romantic partners responded in kind, leading the researchers to speculate that cognitive reframing of an event can trigger a self-perpetuating cycle of positive outcomes. Such a cycle could be due to interpersonal interactions in the relationship context, but there is also the possibility that participants learned to apply a positive, abstract mindset to new relationship events, a process that could also play out in success scenarios outside of relationships.

Long-term self-perpetuating effects are not uncommon even with very brief social psychological writing-based interventions (Wilson, 2006). For example, self-affirmation manipulations, in which participants write about an important value, have positive long-term effects on adolescents’ feelings of social belonging (Cook, Purdie-Vaughns, Garcia, & Cohen, 2011) and prosociality (Thomaes, Bushman, de Castro, & Reijntjes, 2012). Such effects can last over months, or even years, although these long-term studies typically employ periodic “booster” administrations of the manipulation. Likewise, it is not difficult to envision a cascading process in which abstract reframing leads to inferences of ability in a domain such as public speaking, and these inferences lead to a seeking-out (or decreased avoidance) of opportunities to speak in public, resulting in
additional success experiences that participants may frame abstractly, either spontaneously or with the help of additional reframing interventions. Over time, such a cycle could have profound effects on the self-concept.

The current findings demonstrate the potential of abstract reframing as a powerful social influence technique that can reshape how individuals consider self-relevant information. It can be employed in a variety of situations to lead people to draw positive conclusions about themselves, even when they would otherwise resist such generalizations due to existing negative self-knowledge. Future work should investigate whether the self-concept change observed in the current studies dissipates over time, or whether it instead generalizes over time to affect other representations such as attitudes and predictions about the future. In addition, given that the current dependent measures may be characterized as cognitive, it would be interesting to also test affective, behavioral, and motivational outcomes. Given its demonstrated potential and extremely low cost in terms of time and materials, abstract reframing is likely to prove a valuable tool in applied psychologists’ arsenal of social psychological interventions.
References


Appendix A: Tables

Table 1

*Full Regression Model Predicting Ability Scores in Study 1a*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>b</th>
<th>se</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>8.20</td>
<td>0.15</td>
<td>51.85</td>
<td>0.00</td>
</tr>
<tr>
<td>Condition</td>
<td>0.15</td>
<td>0.23</td>
<td>0.65</td>
<td>0.51</td>
</tr>
<tr>
<td>SE</td>
<td>0.25</td>
<td>0.16</td>
<td>1.57</td>
<td>0.11</td>
</tr>
<tr>
<td>Interaction</td>
<td>-0.49</td>
<td>0.23</td>
<td>-2.11</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Note: Condition is dummy-coded (concrete=0, abstract=1) and self-esteem (SE) is standardized.
Table 2

*Full Regression Model Predicting Predictions Scores in Study 1b*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>b</th>
<th>se</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>6.36</td>
<td>0.14</td>
<td>45.16</td>
<td>0.00</td>
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<tr>
<td>Condition</td>
<td>0.04</td>
<td>0.20</td>
<td>0.22</td>
<td>0.82</td>
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<tr>
<td>SC</td>
<td>0.46</td>
<td>0.15</td>
<td>3.04</td>
<td>0.00</td>
</tr>
<tr>
<td>Interaction</td>
<td>-0.38</td>
<td>0.20</td>
<td>-1.86</td>
<td>0.06</td>
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</table>

Note: Condition is dummy-coded (concrete=0, abstract=1) and self-competence (SC) is standardized.
<table>
<thead>
<tr>
<th>Predictor</th>
<th>b</th>
<th>se</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>7.95</td>
<td>0.17</td>
<td>45.15</td>
<td>0.00</td>
</tr>
<tr>
<td>Condition</td>
<td>0.56</td>
<td>0.25</td>
<td>2.20</td>
<td>0.03</td>
</tr>
<tr>
<td>SC</td>
<td>0.90</td>
<td>0.19</td>
<td>4.70</td>
<td>0.00</td>
</tr>
<tr>
<td>Interaction</td>
<td>-0.55</td>
<td>0.25</td>
<td>-2.17</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Note: Condition is dummy-coded (concrete=0, abstract=1) and self-competence (SC) is standardized.
Table 4

**Correlation Matrix of Variables in Study 2**

<table>
<thead>
<tr>
<th>Characteristics of the event</th>
<th>Premeasures</th>
<th>Dependent measures</th>
</tr>
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<tr>
<td>Success</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ease of Recall</td>
<td>.25*</td>
<td>1</td>
</tr>
<tr>
<td>Time passed</td>
<td>.10</td>
<td>-.12</td>
</tr>
<tr>
<td>Self-Competence</td>
<td>.15</td>
<td>.12</td>
</tr>
<tr>
<td>Past Effectiveness</td>
<td>.55***</td>
<td>.27*</td>
</tr>
<tr>
<td>Past Experience</td>
<td>.45***</td>
<td>.13</td>
</tr>
<tr>
<td>Attitudes</td>
<td>.60***</td>
<td>.36**</td>
</tr>
<tr>
<td>Predictions</td>
<td>.62***</td>
<td>.31**</td>
</tr>
<tr>
<td>Ability</td>
<td>.54***</td>
<td>.27**</td>
</tr>
</tbody>
</table>

* p < .05, ** p < .01, *** p < .001
Table 5

*Full Regression Model Predicting Ability Scores in Study 2*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>b</th>
<th>se</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
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<td>.11</td>
<td>41.40</td>
<td>.00</td>
</tr>
<tr>
<td>Past Effectiveness</td>
<td>.83</td>
<td>.12</td>
<td>6.51</td>
<td>.00</td>
</tr>
<tr>
<td>Past Experience</td>
<td>.30</td>
<td>.11</td>
<td>2.53</td>
<td>.01</td>
</tr>
<tr>
<td>Success</td>
<td>.15</td>
<td>.10</td>
<td>1.49</td>
<td>.13</td>
</tr>
<tr>
<td>Condition</td>
<td>.33</td>
<td>.17</td>
<td>1.96</td>
<td>.05</td>
</tr>
<tr>
<td>SC</td>
<td>.24</td>
<td>.12</td>
<td>2.03</td>
<td>.04</td>
</tr>
<tr>
<td>Condition X SC</td>
<td>-.37</td>
<td>.17</td>
<td>2.17</td>
<td>.03</td>
</tr>
</tbody>
</table>

Note: Condition is dummy-coded (concrete=0, abstract=1) and self-competence (SC) is standardized.
Figure 1. Ability scores regressed onto Condition, Self-esteem, and their interaction, graphed at 1 SD below and above the mean of Self-esteem in Study 1a.
Figure 2. Predictions scores regressed onto Condition, Self-competence, and their interaction, graphed at 1 SD below and above the mean of Self-competence in Study 1b.
Figure 3. Ability scores regressed onto Condition, Self-competence, and their interaction, graphed at 1 SD below and above the mean of Self-competence in Study 1b.
Figure 4. Ability scores regressed onto Condition, Self-competence, and their interaction, graphed at 1 SD below and above the mean of Self-competence, and controlling for Success, Past Effectiveness, and Experience in Study 2.