

## CHAPTER 7

# Expandable Selves

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Why do threats to the self result in ineffective strategies or impaired performance for some people but not others? Why are some interventions especially effective in preventing this impairment, and what do these interventions have in common?

Two of the most influential approaches to the study of the self in social psychology involve the *working self* (Markus & Wurf, 1987) and *self-complexity theory* (Linville, 1987). In the present chapter, we suggest that a perspective that combines the working self and self-complexity theory can provide new insight into the self and important self-related phenomena, and can suggest new directions for research. We call our approach “expandable selves” theory.

We begin by presenting the working self and self-complexity theory. Then, using research on stereotype threat and on implicit theories of intelligence as paradigmatic examples, we discuss how our perspective on expandable selves can illuminate effective and ineffective responses to self-related threats and offer a new understanding of strategies to improve people’s functioning in the face of threat.

### **The Working Self and Self-Complexity Theory**

Theory and research on the working self emphasize how the contents of the active self change in different situations. Because the self contains too much information for all of it to be simultaneously active, only a subset of this information is activated, typically those contents of the self that appear relevant to the situation at hand. Thus, different contexts, roles, and identities can evoke different working selves (e.g., McGuire, McGuire, Child, & Fujioka, 1978; McGuire, McGuire, & Winton, 1979) that in turn guide people’s attitudes, judgments, and behaviors. For instance, bilingual Chinese Canadians evidence more characteristically Chinese-self patterns, such as greater endorsement of Chinese cultural values and lower self-esteem when they complete study materials in Chinese rather than in English (Ross, Xun, & Wilson, 2002). Other research finds that which working self is activated in a context can affect important behavioral outcomes. Asian American women primed with their ethnic identity (e.g., answering ques-

tions about languages spoken in their home, how many generations their family had been in America, etc.) performed better on a subsequent math test than women in a control condition, an effect that is consistent with positive stereotypes about the math ability of Asians. However, consistent with research on stereotype threat, when Asian American women were primed with their gender identity (e.g., answering questions whether they preferred coed or single-sex living arrangements), they performed less well on the math test (Shih, Pittinsky, & Ambady, 1999).

These findings on the working self are consistent with recent theorizing about the representation and functioning of the self. For instance, McConnell's (2011) multiple self-aspects framework (MSF) portrays the self as "a collection of multiple, context-dependent selves" (p. 3). There is also, in MSF, attention to how the different aspects of the self activated in a given context may combine to produce psychological and behavioral outcomes. Mischel's cognitive-affective processing system (CAPS) theory (e.g., Mischel & Morf, 2003; Morf & Mischel, Chapter 2, this volume) depicts a similarly dynamic self. This theory proposes that the self is composed of a large number of if-then contingencies, representing the different thoughts, feelings, and behavioral tendencies that are or could be activated in a given context (see also Cervone, 2005). At the heart of these theories is the contextual nature of the contents of the self, the idea that the self is not unitary or constant but changes in reliable ways as situations evoke different context-dependent selves.

In contrast, self-complexity theory has emphasized how the structure of a more global and stable self can differ for different people. The complexity of this structure in turn can affect people's ability to cope with threats or failures and can ultimately affect their overall well-being (Linville, 1985, 1987). In classic research, Linville (1987) found that people with greater self-complexity—who have more and more differentiated self-aspects—experience less stress and depression, and show better physical health following stressful events such as social and academic difficulties, financial problems, and work related pressure (for a review, see Rafaeli-Mor & Steinberg, 2002; Showers & Zeigler-Hill, Chapter 5, this volume). Subsequent research

has shed light on why this might be so. Individuals who are high in self-complexity can more successfully suppress negative or distracting self-relevant thoughts by diverting their attention to positive aspects of self that are unrelated to and untainted by the negative thoughts (Renaud & McConnell, 2002). By contrast, lower self-complexity is thought to lead to greater reactivity to life events because those events affect a larger proportion of the person's overall self-concept (and, in the face of negative events, there are fewer remaining positive aspects to which one may turn).

Combining insights from the working self and self-complexity theory, we propose that regardless of chronic self-complexity the working self that is active in a given situation can vary in its breadth, complexity, and structure—that it is expandable and contractable. Different situations may bring to the fore either a wide range of aspects or only isolated aspects of the self. As a result, the working self in a situation may be relatively broad or relatively narrow. Consistent with self-complexity theory, we suggest that, in general, when the working self is narrow may be more vulnerable and have fewer resources with which to function effectively in challenging situations. In this chapter we focus on how people cope with threat because threat situations are challenging and require effective coping. At the same time, as we discuss later, many threat situations may call forth a relatively narrow self. An important implication of our expandable self theory is that an effective strategy to improve functioning in the face of threat is to broaden the working self that is active in the context at hand.

Toward this end, we examine two phenomena in which threat is high and optimal functioning is important: performance under stereotype threat and performance in the face of challenge or setbacks among people who endorse a fixed (entity) theory of intelligence. In each case, we suggest that threat tends to narrow people's active working self—reducing it to the threatened aspect of self—and, correspondingly, remedies that improve people's functioning in the face of such threats do so in part by restoring a broader working self. We suggest that such remedies can broaden the self in three ways: (1) by connecting the narrower working self

to other aspects of the self, such as personal or group identities that are not under threat; (2) by connecting it to a future, more capable self; or (3) by connecting it to valued other people.

### Stereotype Threat as a Narrowing of the Self

People experience stereotype threat when they are at risk for being viewed through the lens of a negative stereotype about their group (Steele, 2010; Steele, Spencer, & Aronson, 2002). We can all experience stereotype threat in relevant circumstances. When a woman takes an evaluative math test, she may be aware of negative stereotypes that impugn the ability of women in math. As a consequence, she may worry that should she perform poorly, this poor performance could be seen as proof that women are bad at math. When Latino Americans or African Americans take an intellectual test, they may worry that a poor performance could be seen as evidence that their ethnic group is less intelligent than others. When a man engages in a conversation about an emotion-laden topic, he may be cognizant of negative stereotypes about men's emotional intelligence. When white individuals talk with ethnic/minorities about a sensitive race-related topic such as Affirmative Action or immigration policy, they may worry about confirming the stereotype that white people are racist.

An important theme in all these cases is that people worry about being viewed and treated only or primarily as members of a particular, negatively stereotyped social group. For this reason, stereotype threat can evoke a self that is defined chiefly in terms of the negatively stereotyped group identity. The other aspects of people's selves may simply disappear from their active psychology—their broader likes and dislikes, strengths, values, personal allegiances and friendships, interests and hobbies, idiosyncratic political views, and so forth. It is as though these aspects of the self become irrelevant when the reputation of a valued group identity is at stake.

The notion that the active self may change under stereotype threat has not been a major focus of research. But this idea is implicit in the original formulation of stereotype threat

theory. Steele (1997) wrote, "It [stereotype threat] happens when one is in the *field* of the stereotype, what Cross (1991) called 'spotlight anxiety' (p. 195), such that one can be judged or treated in terms of a racial stereotype" (p. 616, original emphasis). In the spotlight of a stereotype, it may seem that nothing but the threatened group identity is relevant.

A role for the self is also evident in Steele's (1997) early discussion of efforts to reduce stereotype threat. Steele writes,

Schooling that [reduces stereotype threat], I have called *wise*, a term borrowed from Irving Goffman (1963), who borrowed it from gay men and lesbians of the 1950s. They used it to designate heterosexuals who understood their full humanity despite the stigma attached to their sexual orientation—usually family and friends, who knew the person beneath the stigma. So it must be, I argue, for the effective schooling of stereotype-threatened groups. (p. 624)

In the context of stereotype threat, wise schooling would convey to students that they are seen as more than a member of a stereotyped group—that they are full people.<sup>1</sup>

Is there evidence that stereotype threat causes a person's active self to shrink to a negative stereotype? Does this shrinking of the self contribute to the cognitive and intellectual decrements associated with stereotype threat? And do effective remedies for stereotype threat expand the self, restoring a broader, more "complex" self and returning people to their full humanity?

### How Does Stereotype Threat Narrow the Active Working Self?

The way in which stereotype threat narrows the working self takes a particular form by virtue of the fact that people typically resist being reduced to a negative stereotype. Under stereotype threat, thoughts of the negative stereotype may be activated. However, on explicit measures, people may try to distance themselves from the stereotype (Steele & Aronson, 1995; Pittinsky, Shih, & Ambady, 1999; see also Pronin, Steele, & Ross, 2004) and, furthermore, when engaged in a stereotype-relevant task, they may effortfully try to suppress thoughts of the stereotype (Logel, Iserman, Davies, Quinn, & Spencer,

2009). Ironically, this effortful suppression may require people to monitor the environment for cues of the stereotype (cf. Wegner, Erber, & Zanakos, 1993), heightening their responsiveness to threatening cues (e.g., Murphy, Steele, & Gross, 2007). This suppression may lead people to experience rebound effects after the task has been completed (Logel et al., 2009). In this sense, even despite people's best efforts, the working self under stereotype threat may be built around or narrowed to the stereotype.

Evidence for this process can be seen in Steele and Aronson (1995, Study 3), in which African American students who anticipated taking a threatening, evaluative verbal test exhibited heightened accessibility of negative racial stereotypes on a word stem completion task, suggestive of the increased salience of their racial identity in the threatening situation. At the same time, however, on explicit measures, African Americans expressed less interest in stereotypically African American activities, such as playing basketball and listening to rap music (see also Pronin et al., 2004). One interpretation of these results is that under threat, African American students' became increasingly conscious of their racial identity but strove to resist being seen solely through the lens of race.

In another line of research, Logel and colleagues (2009) showed suppression of stereotype-relevant thoughts by women taking a math test under stereotype threat. But after the test, women in the stereotype threat condition exhibited a postsuppression rebound, evidencing faster response time to gender stereotype words. Despite their efforts to push the stereotype away, contending with it increased its presence in people's minds. Notably, Logel and colleagues found that this effortful thought suppression contributed to the negative effects of stereotype threat on intellectual performance (see also Taylor & Walton, 2011). Taken together, these results suggest how stereotype threat can narrow the self to one defined in terms of the stereotype.

### ***Do Remedies for Stereotype Threat Expand the Self?***

If a narrowing of the self contributes to the performance decrements associated with

stereotype threat, would strategies to expand the active working self mitigate stereotype threat? If this were the case, it would both suggest novel practical remedies for stereotype threat and provide a more unified theoretical understanding of stereotype threat. Indeed, a key question in contemporary research on stereotype threat involves understanding how even brief interventions can reduce the effects of stereotype threat and generate striking improvements in academic performance among negatively stereotyped students (for reviews, see Cohen & Garcia, 2008; Steele, 2010; Walton & Spencer, 2009; Yeager & Walton, 2011). For instance, Cohen, Garcia, Apfel, and Master (2006) found that a 15- to 20-minute value affirmation exercise in which students wrote about personally important values reduced the black-white achievement gap in grade point average (GPA) among seventh-grade students and produced benefits that persisted, with boosters, over the next 2 years, especially for initially low-performing African Americans (Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009). Similarly, Walton and Cohen (2007, 2011) found that a 1-hour intervention to buttress first-year college students' feelings of social belonging in school raised black students' grades from sophomore through senior year, halving the black-white achievement gap over this period (see also Aronson, Fried, & Good, 2002; Good, Aronson, & Inzlicht, 2003).

We suggest that an important mechanism by which many strategies work to reduce stereotype threat involves broadening students' active self in the academic context—by expanding the self beyond the group identity that is threatened by the stereotype (Steele, 1997). Evidence for this mechanism can be seen in both laboratory and field-experimental research. For instance, laboratory research finds that tasks that remind students of more or broader aspects of the self can reduce stereotype threat. Gresky, Ten Eyck, Lord, and McIntyre (2005) asked highly math-identified women to draw "self-concept maps" before presenting them with an evaluative, threatening math test. Women who were asked to produce maps with many nodes depicting diverse aspects of themselves performed significantly better on an evaluative math test than women asked to produce simple self-maps or none at all. This perfor-

mance gain eliminated the gender difference in math scores.

Using a different task, Ambady, Paik, Steele, Owen-Smith, and Mitchell (2004) asked women a series of questions designed to evoke aspects of their personal identity such as their favorite food and movie (Study 1a), or positive and negative traits (Study 1b). In both studies, the individuation exercise, as compared to answering generic, impersonal questions, significantly improved the math performance of women placed under stereotype threat. In a related vein, in the Logel and colleagues (2009) research described earlier, when the researchers gave women a task to broaden the self (to think of an important part of themselves unrelated to school), women's math performance under stereotype threat improved sharply.

Similarly, directly reminding people of an unrelated positive group identity can prevent stereotype threat, as in the Shih and colleagues (1999) study mentioned earlier, in which priming Asian women with their ethnic rather than gender identity raised their math performance (see also McGlone & Aronson, 2007). A final strategy to broaden people's selves under stereotype threat involves challenging the assumption that the group identity under threat is distinct and isolated. For instance, Rosenthal and Crisp (2006) found that asking women to think of things that men and women have in common reduced stereotype threat.

#### **Does Value Affirmation Expand the Self?: Evidence from the Laboratory**

Each of the lines of research we have just reviewed illustrates how exercises that expand the active working self can improve performance in an otherwise threatening context (see also Critcher & Dunning, 2009, Study 3). This analysis may shed light on the way in which value affirmation exercises attenuate the effects of stereotype threat (see Cohen & Garcia, 2008; Sherman & Cohen, 2006; Sherman & Hartson, 2011). In a typical value affirmation study, people are presented with a list of personal values (relationships with friends and family, having a good sense of humor, being good at sports, etc.) and asked to rank-order these values in terms of their personal importance. In the value affirmation condition, participants

are then asked to write about why their top-ranked value is important to them. In the control condition, participants are asked to write about why a low-ranked value might matter to someone else.

Much research shows that value affirmation exercises improve people's functioning in the face of threat (see Sherman & Cohen, 2006). For instance, value affirmations increase people's acceptance of otherwise threatening health information (e.g., Sherman, Nelson, & Steele, 2000). In the context of stereotype threat, value affirmations can improve academic performance, an effect found in both laboratory research (Martens, Johns, Greenberg, & Schimel, 2006; Taylor & Walton, 2011) and, as noted, in intervention field experiments (Cohen, Garcia, Apfel, & Master, 2006; Cohen et al., 2009).

Do value affirmations improve people's performance under stereotype threat in part by broadening the active working self? Research on value affirmation interventions grew out of classic *self-affirmation theory*, which posits that people have a basic need to see themselves as good, moral, and efficacious (Steele, 1988). In this view, writing about personal values reminds people of important sources of self-worth, which allows people to cope more effectively with threat (see Sherman & Cohen, 2006). However, past theorizing has not directly examined how the nature of the active self changes as a consequence of affirmation exercises. It could be that writing about personal values *heightens* a focus on the self, a view implied by the term *self-affirmation*. Alternatively, perhaps writing about personal values broadens the active self. It is because of this ambiguity that we use the more neutral term *value affirmation* rather than *self-affirmation*.

What is the evidence that value affirmations broaden the active self, restoring a person facing a threat from, as it were, a narrow self to a fuller self? In one important line of research, Crocker, Niiya, and Mischkowski (2008) examined the emotions caused by value affirmation exercises, and the role these emotions play in mediating the effects of the affirmation in helping people cope with threat. They found that value affirmation has its strongest effects on positive, other-directed emotions such as "loving," "giving," "empathetic," and "connected;" by contrast, it had appreciably smaller effects

on self-directed emotions such as “proud,” “strong,” and “admirable.” Moreover, the increase in feeling “loving” and “connected” statistically mediated the effect of the value affirmation on the acceptance of threatening health information—in this study, smokers’ acceptance of information about the health risks of smoking. These findings led Crocker and colleagues to conclude that “reminding people what they love or care about may enable them to transcend the self” (p. 746). We would amend this statement to say that affirmation allows people to transcend the narrow self defined by the threat at hand—to become more than “a smoker” in this context—and as a consequence to be able to appraise and respond to information that threatens “the smoker” in a more adaptive manner.

There is more evidence that value affirmation expands the self in the face of threat. Critcher and Dunning (2009) found that value affirmation increases agreement with explicit items consistent with a broader active self. In a context in which students answered questions about their academic major, a value affirmation increased agreement with items such as “If I did poorly in an area related to my academic major, this deficiency would be specific enough that other aspects of myself would make up for it” and “In thinking of domains that contribute to how I feel about myself, nonacademic aspects easily come to mind.” In another study, Critcher and Dunning found that a task in which participants were asked to represent diverse parts of the self in wedges within a circle reduced defensiveness in response to threatening information (receiving a poor grade on an assignment) to the same degree as a value affirmation (cf. Gresky et al., 2005). Consistent with the hypothesis that the self-representation task and the affirmation had similar psychological effects (expanding the self), there was no additional reduction in defensiveness among participants who completed both the self-representation task and the value affirmation.

The view that value affirmation reduces threat by broadening the self is also consistent with research demonstrating that value affirmation reduces threat only when the affirmed value is in a different domain than the threat (Blanton, Cooper, Skurnik, & Aronson, 1997; Lehmiller, Law, & Tormala,

2010; Sivanathan, Molden, Galinsky, & Ku, 2008). Indeed, value affirmations that do not broaden the self—that is, those that simply affirm the value that is subsequently threatened—have been shown to create greater rigidity in the face of threat, for example, increasing self-justification and escalating commitment to a failing course of action, presumably by further focusing the working self on the threatened aspect of self (Blanton et al., 1997; Sivanathan et al., 2008).

If an expansion of the working self to include unthreatened aspects of self is sufficient to reduce defensiveness or improve performance in the face of threat, then merely increasing the accessibility of unthreatened aspects of self should reduce defensiveness. A recent series of studies has explored this possibility using priming. Its results suggest that even subliminal primes can reduce defensiveness or increase performance if they make unthreatened aspects of self more cognitively accessible (Paunesku, Walton, & Dweck, 2011b). In one study, participants who were placed under stereotype threat performed significantly better on an academic achievement test after having been primed with family and friend using a sentence-unscrambling task. In another study, the same effect was obtained when participants were incidentally exposed to a photographic collage depicting (other people’s) families and friends. In yet another study, the same prime reduced defensiveness to threatening health information.

### ***Does Value Affirmation Expand the Self?: Evidence from the Field***

Our analysis suggests that value affirmations may improve functioning in the face of threat by evoking a broader sense of self. Is there evidence in field settings that value affirmation interventions broaden the self? Although such evidence is less direct than findings from controlled laboratory experiments, consistent with this hypothesis, one field experiment found that a value affirmation exercise reduced the accessibility of negative racial stereotypes among African American middle school students several months after the intervention (Cohen et al., 2006).

As noted earlier, a second intervention to reduce stereotype threat involves efforts to

buttress students' feelings of social belonging in school. Walton and Cohen (2007, 2011) found that a 1-hour social belonging intervention delivered to college freshmen raised African American students' grades over the next 3 years. It is not hard to imagine how strategies to enrich students' relationships with peers and instructors in an academic environment could broaden people's active self in the academic environment; that is, to the extent that people feel they belong in a setting and are respected and valued by others there, they may be less likely to worry that they will be viewed only through the lens of a negative racial stereotype—to be reduced to a stereotype (Walton & Carr, 2011; see also Carr, Walton, & Dweck, 2011).

Indeed, findings from Walton and Cohen's social belonging intervention provide evidence that the intervention induced a broader sense of self in participants. As in the value affirmation intervention, Walton and Cohen (2011) found that the social belonging intervention reduced the accessibility of racial stereotypes among African American students. Strikingly, in this study, reduction in the accessibility of racial stereotypes was observed 3 years after the intervention had been delivered. Again, the lower accessibility of racial stereotypes suggests the possibility that the intervention led participants to experience a broader working self in the academic setting—one that was less narrowly defined by a negatively stereotyped identity.

In this section we have argued that stereotype threat narrows the active self. It forces people to contend with the negative stereotype about their group in such a way that their working self may be defined chiefly in terms of that stereotype. By contrast, research in both the laboratory and field settings finds that effective strategies to reduce stereotype threat are ones that evoke a broader self. These strategies bring people under threat into contact with their fuller humanity and, we suggest, thereby arm them with greater resources to combat that threat.

### Implicit Theories and Expandable Selves

As we have seen, threats to one's self or identity often occur when a person is under judgment—when a valued aspect of the self

is in danger of being undermined by failure or rejection. Another major context in which this may happen involves implicit theories of intelligence (Dweck, 1999; Dweck & Leggett, 1988). Here, too, people under judgment may experience threat, and may suffer impaired performance. Let us explore this phenomenon, keeping in mind that since there is far less direct evidence about the working self in this area of research, our analysis will be more speculative.

People who view intelligence as fixed rather than as malleable often view academic challenges as tests of their intelligence and interpret academic setbacks as evidence of a fixed inability (Blackwell, Trzesniewski, & Dweck, 2007; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Lin, & Wan, 1999; for analogous findings in the social domain with theories of personality, see Erdley, Cain, Loomis, Dumas-Hine, & Dweck, 1997; Yeager, Trzesniewski, Tirri, Nokelainen, & Dweck, 2011). As a consequence, for a person with a fixed theory of intelligence, an academic challenge poses the threat of permanent negative evaluation in a domain that may be central to the self. From this view, in confronting an academic challenge the active self may be defined chiefly by this threat—"Am I smart or not?" And an answer, or a potential answer, in the negative has been shown to promote highly defensive behavior—behavior designed to protect the "fixed intelligence" self, but often at great cost (see Dweck & Elliott-Moskwa, 2010).

For example, after setbacks or in the face of poor skills, those with a fixed theory of intelligence often choose to bolster their sense of ability by engaging in downward social comparison (examining the work of students who performed worse than they had) instead of upward comparison and trying to learn from higher-performing students' work (Nussbaum & Dweck, 2008). They have been shown to avoid remedial courses that could brand them as unskilled but improve their chances for college success (Hong et al., 1999). They also consider cheating a viable option to restore their sense of ability (Blackwell et al., 2007), and have been shown to lie about their suboptimal performance for similar reasons (Mueller & Dweck, 1998). Across challenging school transitions, those with a fixed theory of in-

telligence show worse and worse grades over time relative to those with a malleable view because overconcern with their ability leads them to avoid challenging and effortful tasks and to show defensive rather than mastery-oriented responses to difficulty (Blackwell et al., 2007). In short, overconcern with their narrow, "fixed intelligence" self appears to lead those with fixed theories of intelligence to sacrifice learning and hence their future achievement.

By contrast, students who view intelligence as malleable—as something they can develop—tend to interpret an academic setback as evidence that they have not yet acquired the relevant skills or found the strategies needed to succeed (e.g., Blackwell et al., 2007; Hong et al., 2007). In response, they may redouble their efforts, seek help, or try new strategies (Blackwell et al., 2007; Hong et al., 1999; Mueller & Dweck, 1998; Nussbaum & Dweck, 2008). Moreover, experiments that have induced a malleable theory have produced these same effects (see, e.g., Hong et al., 1999; Nussbaum & Dweck, 2008). Within a malleable theory, the working self that confronts an academic challenge is not defined chiefly by its present ability. It is also composed of a future self that could have more of the ability under evaluation and is, in fact, *actively improving* this ability by virtue of pursuing challenges. In this way, the working self of an incremental theorist who encounters an academic challenge is implicitly a broader self, and the integrity of this broader self does not hang on the outcome of the particular academic challenge at hand. Indeed, it could be the case that the cues inherent in challenge or setbacks activate this broader self—a future self with greater skills, and a present self with the resources and strategies to get there.

From this perspective, interventions that instill a malleable theory—that lead people to view intelligence as an attribute they can develop—may generate their effects in part by increasing the breadth and resources of the active self in an academic context. Such interventions tightly associate the experience of challenge to a future, improved self that can surmount the challenge. In this way, challenges that may otherwise narrow the self instead prime an expanded self with self-improvement or learning goals. Blackwell and colleagues (2007) used an eight-session

workshop to teach a "growth mindset" to middle school students in New York City. In the control group, students received eight sessions of important study skills, but in the growth mindset group they also learned that the brain grows new connections with learning and effort, and that over time they could get smarter. The students in the control condition continued to show the decline in math grades that is common in middle school, but students in the growth mindset condition showed a sharp increase in math achievement over the rest of the school year. Reports from teachers, blind to condition, confirmed that the students in the growth mindset intervention showed greater adoption of learning goals even in the face of difficulty.

Anonymous self-reports from students who took an online version of the growth mindset training further illustrate the idea that adopting a growth mindset can broaden the working self and enhance its resources, bridging the way to a more competent future self. Many students reported that they were now seeking and confronting difficulty, using better and more study strategies, and not giving up the way they used to because they believed they were growing new neural connections that would make them smarter in the future.

Recently, Yeager, Trzesniewski, and Dweck (2011) developed a six-session intervention that taught high school students a malleable theory of personality. Students learned that their own personality and that of their peers could be changed over time. The students who learned this theory, compared to students who went through a six-session social coping skills program, showed markedly less aggression in the face of peer exclusion, and these effects lasted over the remaining 3 months of the school year. How did this happen?

Work by Yeager and colleagues (2011) showed that students who hold a fixed theory of personality, when excluded or victimized, feel as though they have been reduced to a bad and shameful person. This, in part, leads them to harbor a desire for revenge. Perhaps our malleable theory intervention worked by allowing students to maintain a broader and more complex working self in the face of these social setbacks—a self that implicitly contained future selves that could



learn or improve and not be subject to the same mistreatment in the future. Indeed, after the intervention, many of the participating students were sufficiently secure to remain friendly and prosocial toward peers who had excluded them. Interestingly, students in the control group that learned an array of social coping skills did not show improved, less aggressive reactions to social setbacks, nor did they exhibit anywhere near the same degree of prosocial behavior toward peers who had excluded them. Simply teaching concrete skills may not be sufficient to develop or maintain an expanded self in a time of threat.

This work by Yeager and colleagues (2011) provides an interest parallel to the work of Helen Block Lewis (1971) on shame and to her description of the impact of shame on the self. Lewis underscored the idea that feelings of shame impair the self and lead to a sense of shrinking, of being small. In her view, resolving feelings of shame reactivates—liberates—the larger self. The incremental intervention may have both reduced the initial shame (allowing students to maintain a broader self) and allowed students to more readily resolve any remaining shame (further restoring a fuller self).

Finally, Carr, Dweck, and Pauker (2011) recently investigated what happens when college students hold a fixed theory of prejudice—that is, when people believe that prejudice is a fixed trait of the self. They have shown that white individuals who hold this view, even when they have low levels of explicit and implicit prejudice, act like highly prejudiced individuals. They have a strong wish to avoid interracial interactions; when these interactions occur they wish to keep their distance and terminate the interactions as quickly as possible, and they are rated as highly anxious and unfriendly in an interracial interaction. Follow-up research shows that this is because people with the fixed theory are preoccupied with not appearing prejudiced to themselves and to others. They do not want to think prejudiced thoughts, have prejudiced feelings, or risk producing prejudiced speech or behavior. In other words, their working self in that situation may be reduced to that of a “potentially prejudiced person.” Ironically, this preoccupation leads them to behave precisely the way a prejudiced person would.

Carr and colleagues (2011) however, showed that teaching a malleable theory of prejudice erased these effects. In one study, participants were given the opportunity to engage in an activity that could reduce their prejudice but required them to confront their current prejudice and racial insensitivity. While participants who were led to view prejudice as fixed tended to avoid such activities, those who were led to view prejudice as malleable actively sought them out. They were not only less preoccupied with the threat of appearing prejudiced but they also seemed keen to realize a less prejudiced future self.

In each of these lines of work, there was a central personal quality that defined the individual as competent, worthy or good—as intelligent; as having the positive regard of one’s peers; and as being free of prejudice. In each case that personal quality was under threat by judgment or evaluation, and individuals with fixed mindsets overreacted to the threat because it endangered their view of themselves as competent, worthy, or good. We suggest that, in each case, a growth mindset manipulation or intervention helped individuals confront this threat with less anxiety and more confidence by broadening their active working self to incorporate a future, improved self. In this way, the growth mindset intervention may bear an important similarity with classic attributional retraining interventions (see Wilson, Damiani, & Shelton, 2002). For instance, Wilson and Linville (1982, 1985) communicated to first-year college students that academic setbacks are normal in the transition to college and are due to the difficulty of this transition. This message led to improved grades and retention in school of students who were struggling academically. Similarly, Walton and Cohen’s (2007, 2011) social belonging intervention communicated to first-year students that worries about social belonging are common at first in the transition to a new school and dissipate with time. In these cases, a potentially important aspect of the intervention is that it helps students see connections between their present self and a future, improved self, broadening students’ active self in the academic environment.

This approach may be contrasted with strategies that change the individual’s per-

ception of a threat rather than that expand the self to better tackle the threat. Such alternative strategies include reappraisal interventions to blunt the negative impact of threatening information (see Gross & Thompson, 2007). For instance, Jamieson, Mendes, Blackstock, and Schmader (2010) found that teaching students to view the physiological arousal they experienced in taking the Graduate Record Examination (GRE) as evidence of a "challenge response" rather than as a sign of impending failure improved students' scores on the mathematics portion of the GRE both on a practice exam and, more than a month later, the actual GRE. In this approach, students are led to think differently about a stimulus in a way that makes that stimulus less threatening. By contrast, growth mindset interventions (and attributional retraining interventions) potentially both change the meaning of a stimulus such as an academic setback *and* broaden the active self, so that it is not defined exclusively by the threat at hand.

If the threats that arise from a fixed theory of intelligence and stereotype threat both involve a narrowing of the self, and if remedies to both kinds of threats involve broadening the self, then interventions explored in one area may be effective in the other. Consistent with this hypothesis, research finds that a growth mindset intervention can prove especially effective in improving academic outcomes of students who confront negative stereotypes in school (see Aronson et al., 2002; Good et al., 2003; Romero, Paunesku, & Dweck, 2011). Moreover, Aronson (1999) has directly shown that giving growth versus fixed mindset instructions before a standardized test alleviates rather than exacerbates stereotype threat.

### Questions for the Future

This analysis raises potentially important research questions. For instance, would strategies to broaden the active self, such as completing a value affirmation exercise (Cohen et al., 2006, 2009), creating a complex self-map (Gresky et al., 2005), providing individuating information (Ambady et al., 2004), or being passively primed with an important unthreatened aspect of self (Paunesku et al., 2011b), which help to reduce stereotype threat, also improve functioning among

people with a fixed theory of intelligence in the face of an academic setback?

Is the way that *others* regard one in a given situation an especially powerful way of expanding or contracting the working self? Much of the stereotype threat effect derives from the belief that others are regarding one through the lens of a stereotype. What factors would make someone more or less susceptible to being defined by others? Is a powerful person someone who has the power to define other people's selves, perhaps because that person levies judgments and those judgments are valued?

Do idols, heroes, or role models who are assimilated into the working self expand the working self and make people feel more powerful, and does this help them function more effectively (see Karniol et al., 2011)? How do groups or group identities expand or contract the working self and make people more able or less able to cope with threat?

What about person perception? Would expanding people's view of others make them more compassionate and altruistic? Would teachers with expanded views of their students be able to develop the abilities of minority students more skillfully? As a society, would we build fewer prisons and create more job training programs?

It is also interesting to ask which kinds of self-broadening interventions or manipulations remain with individuals and are carried forward to help them combat threat in new situations; that is, which kinds of self-broadening manipulations or interventions become more lasting and accessible parts of the self or provide strategies that individuals can readily access in the wake of threat to cope effectively? And what are the critical ingredients of interventions that have these lasting effects? It will be important to understand the characteristics of self-broadening interventions that "stick" and allow the individual to call forth the expanded self to operate optimally in new situations.

Finally, just as threat can narrow the active self, we note that an already narrow self can easily be threatened (Critcher & Dunning, 2009; Sherman et al., 2000). For instance, Paunesku, Walton, and Dweck (2011a) found that people engage in active, motivated reasoning to defend even a mundane aspect of self when this self-aspect has been brought to the fore by contextual cues. In

this research, people were led to adopt McDonald's selves, Burger King selves, airplane passenger selves, or car driver selves. In each case, when these selves were highlighted, people reasoned in ways that protected the active self, even when this reasoning went against their broader self-interest. In general, then, narrow selves may have shrunken perspectives and diminished resources, and may prevent people from thinking and acting in their larger self-interest.

### Conclusion

In this chapter, we have argued that threat narrows the working self that is active in a context, and that this narrowed self has relatively fewer resources with which to cope with the threat. Using research on stereotype threat and implicit theories of intelligence as examples, we have argued that threat can define the active self in a context. Under stereotype threat, people may feel that they are no more than a token of their negatively stereotyped group, that their many personal attributes and characteristics are irrelevant. With a fixed theory of intelligence, people encountering academic challenges may feel that they are no more than their fixed intelligence, which is up for judgment, and that setbacks can define them as permanently lacking in ability. From the perspective of expandable self theory, manipulations or interventions that connect the working self to broader aspects of the self, to other people, or to a more competent future self can help people gain more resources to cope with threat. Individuating questions or value affirmation exercises serve as an invitation for broader aspects of the self to rejoin the active self that is present in the context. Similarly, social belonging and growth mindset interventions may function to broaden the self, connecting the present self to others and to a future, improved self. These expansions of the self may then improve people's functioning.

As we proposed at the outset, at a broader theoretical level, our approach merges research on working selves, which suggests that people's sense of self fluctuates with shifts in context, and self-complexity theory, which suggests that the structures of people's selves can affect how well they function and respond to threat. We have proposed that

the self people bring to bear in a given context can be narrowed or expanded, resulting, in many cases, in thinned or enhanced resources for coping with threats or difficulties in that context. It is intriguing to think that the more people are aware of their expandable selves, the more they may be able to evoke more complex and varied selves in challenging situations and thereby harness more resources to perform effectively.

### Note

1. The concern that one will be viewed as less than a full human being is not exaggerated. Research shows that black Americans, for instance, are associated more than white Americans with apes and, furthermore, that this black = Ape association predicts endorsement of violence against black criminal suspects (Goff, Eberhardt, Williams, & Jackson, 2008). A recent news story describes the experience of an Israeli historian, Zeev Sternhell, at the end of World War II: "Sternhell remembers a Polish woman shouting at Jews, 'Filthy animals, you came out of your holes, too bad they didn't finish you off!' When [Sternhell] emigrated to Israel, in 1951, at the age of sixteen, the transformation was, he says, 'metaphysical.' In Europe during the war, Sternhell told his *Haaretz* colleague Ari Shavit, the Jews 'were human dust. They were people who were shot in a way cats and dogs are not shot. . . . And now, just a few years later, the Jew becomes a full and complete being'" (Remnick, 2011, p. 58).

### References

- Ambady, N., Paik, S. K., Steele, J., Owen-Smith, A., & Mitchell, J. P. (2004). Deflecting negative self-relevant stereotype activation: The effects of individuation. *Journal of Experimental Social Psychology, 40*, 401-408.
- Aronson, J. (1999). *The effects of conceiving ability as fixed or improvable on responses to stereotype threat*. Unpublished manuscript, New York University.
- Aronson, J., Fried, C., & 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.

- Blackwell, L. A., Trzesniewski, K. H., & Dweck, C. S. (2007). Theories of intelligence and achievement across the junior high school transition: A longitudinal study and an intervention. *Child Development, 78*, 246–263.
- Blanton, H., Cooper, J., Skurnik, I., & Aronson, J. (1997). When bad things happen to good feedback: Exacerbating the need for self-justification with self-affirmations. *Personality and Social Psychology Bulletin, 23*(7), 684–692.
- Carr, P. B., Dweck, C. S., & Pauker, K. (2011). *Prejudiced behavior without prejudice?: Beliefs about the malleability of prejudice affect interracial interactions*.
- Carr, P. B., Walton, G. M., & Dweck, C. S. (2011). *A sense of working together forestalls stereotype threat*. Manuscript in preparation.
- Cervone, D. (2005). Personality architecture: Within person structures and processes. *Annual Review of Psychology, 56*, 423–452.
- Cohen, G. L., & Garcia, J. (2008). Identity, belonging, and achievement: A model, interventions, implications. *Current Directions in Psychological Science, 17*, 365–369.
- Cohen, G. L., Garcia, J., Apfel, N., & Master, A. (2006). Reducing the racial achievement gap: A social-psychological intervention. *Science, 313*, 1307–1310.
- Cohen, G. L., Garcia, J., Purdie-Vaughns, V., Apfel, N., & Brzustoski, P. (2009). Recursive processes in self-affirmation: Intervening to close the minority achievement gap. *Science, 324*, 400–403.
- Critcher, C. R., & Dunning, D. (2009). *Affirmations provide perspective: Reducing defensiveness by expanding the working self-concept*. Unpublished manuscript, Cornell University, Ithaca, NY.
- Crocker, J., Niiya, Y., & Mischkowski, D. (2008). Why does writing about important values reduce defensiveness?: Self-affirmation and the role of positive, other-directed feelings. *Psychological Science, 19*, 740–747.
- Cross, W. E., Jr. (1991). *Shades of black: Diversity in African-American identity*. Philadelphia: Temple University Press.
- Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development*. Philadelphia: Psychology Press.
- Dweck, C. S., & Elliott-Moskwa, E. S. (2010). Self-theories: The roots of defensiveness. In J. E. Maddux & J. P. Tangney (Eds.), *The social psychological foundations of clinical psychology* (pp. 136–156). New York: Guilford Press.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*, 256–273.
- Erdley, C., Cain, K., Loomis, C., Dumas-Hines, F., & Dweck, C. S. (1997). The relations among children's social goals, implicit personality theories and response to social failure. *Developmental Psychology, 33*, 263–272.
- Goff, P. A., Eberhardt, J. L., Williams, M., & Jackson, M. C. (2008). Not yet human: Implicit knowledge, historical dehumanization, and contemporary consequences. *Journal of Personality and Social Psychology, 94*, 292–306.
- Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity*. New York: Touchstone.
- Good, C., Aronson, J., & Inzlicht, M. (2003). Improving adolescents' standardized test performance: An intervention to reduce the effects of stereotype threat. *Journal of Applied Developmental Psychology, 24*, 645–662.
- Gresky, D. M., Ten Eyck, L. L., Lord, C. G., & McIntyre, R. B. (2005). Effects of salient multiple identities on women's performance under mathematics stereotype threat. *Sex Roles, 53*, 703–716.
- Gross, J. J., & Thompson, R. A. (2007). Emotion regulation: Conceptual foundations. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 3–24). New York: Guilford Press.
- Hong, Y. Y., Chiu, C., Dweck, C. S., Lin, D., & Wan, W. (1999). Implicit theories, attributions, and coping: A meaning system approach. *Journal of Personality and Social Psychology, 77*, 588–599.
- Jamieson, J. P., Mendes, W. B., Blackstock, E., & Schmader, T. (2010). Turning knots in your stomach into bows: Reappraising arousal improves performance on the GRE. *Journal of Experimental Social Psychology, 46*, 208–212.
- Karniol, R., Galili, L., Shtilerman, D., Naim, R., Stern, K., Manjoch, H., et al. (2011). Why Superman can wait: Cognitive self-transformation in the delay of gratification paradigm. *Journal of Clinical Child and Adolescent Psychology, 40*, 307–317.
- Lehmiller, J. J., Law, A. T., & Tormala, T. T. (2010). The effect of self-affirmation on sexual prejudice. *Journal of Experimental Social Psychology, 46*(2), 276–285.
- Lewis, H. B. (1971). *Shame and guilt in neurosis*. New York: International University Press.
- Linville, P. W. (1985). Self-complexity and af-

- fective extremity: Don't put all your eggs in one cognitive basket. *Social Cognition*, 3, 94–120.
- Linville, P. W. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology*, 52, 663–676.
- Logel, C., Iserman, E. C., Davies, P. G., Quinn, D. M., & Spencer, S. J. (2009). The perils of double consciousness: The role of thought suppression in stereotype threat. *Journal of Experimental Social Psychology*, 45, 299–312.
- Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology*, 38, 299–337.
- Martens, A., Johns, M., Greenberg, J., & Schimel, J. (2006). Combating stereotype threat: The effect of self-affirmation on women's intellectual performance. *Journal of Experimental Social Psychology*, 42, 236–243.
- McConnell, A. R. (2011). The multiple self-aspects framework: Self-concept representation and its implications. *Personality and Social Psychology Review*, 15, 3–27.
- McGlone, M. S., & Aronson, J. (2007). Forewarning and forearming stereotype-threatened students. *Communication Education*, 56, 119–133.
- McGuire, W. J., McGuire C. V., Child, P., & Fujioka, T. (1978). Salience of ethnicity in the spontaneous self-concept as a function of one's ethnic distinctiveness in the social environment. *Journal of Personality and Social Psychology*, 36, 511–520.
- McGuire, W. J., McGuire, C. V., & Winton, W. (1979). Effects of household sex composition on the salience of one's gender in the spontaneous self-concept. *Journal of Experimental Social Psychology*, 15, 77–90.
- Mischel, W., & Morf, C. C. (2003). The self as a psycho-social dynamic processing system: A meta-perspective on a century of the self in psychology. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 15–43). New York: Guilford Press.
- 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.
- Murphy, M. C., Steele, C. M., & Gross, J. J. (2007). Signaling threat: How situational cues affect women in math, science, and engineering settings. *Psychological Science*, 18, 879–885.
- Nussbaum, A. D., & Dweck, C. S. (2008). Defensiveness vs. remediation: Self-theories and modes of self-esteem maintenance. *Personality and Social Psychology Bulletin*, 34, 599–612.
- Paunesku, D., Walton, G. M., & Dweck, C. S. (2011a). *Passive affirmation*.
- Paunesku, D., Walton, G. M., & Dweck, C. S. (2011b). *Situational selves: The person and the situation reconsidered*. Manuscript under review.
- Pittinsky, T. L., Shih, M., & Ambady, N. (1999). Identity adaptiveness and affect across one's multiple identities. *Journal of Social Issues*, 55(3), 503–518.
- Pronin, E., Steele, C. M., & Ross, L. (2004). Identity bifurcation in response to stereotype threat: Women and mathematics. *Journal of Experimental Social Psychology*, 40, 152–168.
- Rafaeli-Mor, E., & Steinberg, J. (2002). Self-complexity and wellbeing: A review and research synthesis. *Personality and Social Psychology Review*, 6, 31–58.
- Remnick, D. (2011, February 28). The dissenters. *The New Yorker*, pp. 46–59.
- Renaud, J., & McConnell, A. R. (2002). Organization of the self-concept and the suppression of self-relevant thoughts. *Journal of Experimental Social Psychology*, 38(1), 79–86.
- Romero, C. L., Paunesku, D., & Dweck, C. S. (2011). *Brainology in the classroom: An online growth mindset intervention affects GPA, conduct, and implicit theories*. Poster presented at the Society for Research in Child Development (SRCD), Montreal, Canada.
- Rosenthal, H. E. S., & Crisp, R. J. (2006). Reducing stereotype threat by blurring intergroup boundaries. *Personality and Social Psychology Bulletin*, 32, 501–511.
- Ross, M., Xun, W. Q. E., & Wilson, A. E. (2002). Language and the bicultural self. *Personality and Social Psychology Bulletin*, 28, 1040–1050.
- Sherman, D. K., & Cohen, G. L. (2006). The psychology of self-defense: Self-affirmation theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 38, pp. 183–242). San Diego, CA: Academic Press.
- Sherman, D. K., & Hartson, K. A. (2011). Reconciling self-defense with self-protection: Self-affirmation theory. To appear in M. D. Alicke & C. Sedikides (Eds.), *Handbook of self-enhancement and self-protection* (pp. 128–151). New York: Guilford Press.

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- Sherman, D. A. K., Nelson, L. D., & Steele, C. M. (2000). Do messages about health risks threaten the self?: Increasing the acceptance of threatening health messages via self affirmation. *Personality and Social Psychology Bulletin*, 26, 1046–1058.
- Shih, M., Pittinsky, T. L., & Ambady, N. (1999). Stereotype susceptibility: Identity salience and shifts in quantitative performance. *Psychological Science*, 10, 80–83.
- Sivanathan, N., Molden, D., Galinsky, A., & Ku, G. (2008). The promise and peril of self-affirmation in de-escalation of commitment. *Organizational Behavior and Human Decision Processes*, 107(1), 1–14.
- Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 261–302). New York: Academic Press.
- Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52, 613–629.
- Steele, C. (2010). *Whistling Vivaldi: And other clues how stereotypes affect us*. New York: Norton.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69, 797–811.
- Steele, C. M., Spencer, S. J., & Aronson, J. (2002). Contending with group image: The psychology of stereotype and social identity threat. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 34, pp. 379–440). San Diego, CA: Academic Press.
- Taylor, V. J., & Walton, G. M. (2011). Stereotype threat undermines academic learning. *Personality and Social Psychology Bulletin*.
- Walton, G. M., & Carr, P. B. (2011). Social belonging and the motivation and intellectual achievement of negatively stereotyped students. In M. Inzlicht & T. Schmader (Eds.), *Stereotype threat: Theory, processes, and application*.
- Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology*, 92, 82–96.
- Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes among minority students. *Science*, 331, 1447–1451.
- Walton, G. M., & Spencer, S. J. (2009). Latent ability: Grades and test scores systematically underestimate the intellectual ability of women and ethnic minority students. *Psychological Science*, 20, 1132–1139.
- Wegner, D. M., Erber, R., & Zanakos, S. (1993). Ironic processes in the mental control of mood and mood-related thought. *Journal of Personality and Social Psychology*, 65, 1093–1104.
- Wilson, T. D., Damiani, M., & Shelton, N. (2002). Improving the academic performance of college students with brief attributional interventions. In J. Aronson (Ed.), *Improving academic achievement: Impact of psychological factors on education* (pp. 88–108). San Diego, CA: Academic Press.
- Wilson, T. D., & Linville, P. W. (1982). Improving the academic performance of college freshmen: Attribution therapy revisited. *Journal of Personality and Social Psychology*, 42, 367–376.
- Wilson, T. D., & Linville, P. W. (1985). Improving the performance of college freshmen with attributional techniques. *Journal of Personality and Social Psychology*, 49, 287–293.
- Yeager, D. S., Trzesniewski, K. H., & Dweck, C. S. (2011). *An implicit theories intervention reduces adolescent aggression in response to victimization and exclusion*. Manuscript submitted for publication.
- Yeager, D. S., Trzesniewski, K. H., Tirri, K., Nokelainen, P., & Dweck, C. S. (2011). Adolescents' implicit theories predict desire for vengeance after remembered and hypothetical peer conflicts: Correlational and experimental evidence. *Developmental Psychology*, 47, 1090–1107.
- Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research*, 81, 267–301.

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