particular circumstances of our lives, what I am calling identity contingencies. If we didn't need them to help us cope with these circumstances, the perspectives, emotional tendencies, values, ambitions, and habits that make up the dispositional side of our social identities would just gradually leak out of our psyches and be gone. The second conclusion foreshadows the more pragmatic direction this book is taking. If you want to change the behaviors and outcomes associated with social identity—say, too few women in computer science—don't focus on changing the internal manifestations of the identity, such as values, and attitudes. Focus instead on changing the contingencies to which all of that internal stuff is an adaptation. Bert Williams, the great African American comedian of the early twentieth century, once said, "I have never been able to discover that there is anything disgraceful about being a Negro, but I have to concede, I have found it inconvenient." In Williams's terms, then, we needn't worry about changing something "disgraceful" about being a Negro; change instead the "inconvenience" of being a Negro, change the contingencies of the identity.

Although our broadening understanding of social identity seemed promising, the game of science is played on the ground, as they say, on the ground of empirical research. And this broadening understanding had a clear and testable implication: if the effects we'd observed first with women and then with blacks were not entirely due to characteristics of these groups, but to stereotype and identity threat, as we argued, then similar effects should be observable in many groups, in relation to many different stereotypes, and in relation to many different performances and behaviors. Evidence showing this would add empirical heft to our emerging understanding. Back, then, to the through-line of this book, the expanding program of research on identity threat and its cures.

CHAPTER 5

The Many Experiences of Stereotype Threat

1.

When Ted McDougal, a white student at a prestigious university, walked into the first meeting of his African American political science class, he found himself counting. There were forty-five students in the class: one other, beside himself, was white; a few Asian students dotted the room; all the others were black. Ted didn't know much about African American experience. He had enrolled in the course to broaden himself. Yet, as he took his seat, he felt a question hanging over his head like a caption in a cartoon: What was this white guy doing in a class on African American politics?

The class began with history. It focused on the role of violence in maintaining whites' political dominance in the South after the

Civil War. Photographs of whippings were shown through PowerPoint. The professor pushed the students to put themselves in the shoes of the people involved in this drama. Discussion was vigorous. Ted noted that the black students started saying "we." He knew they weren't including him. Then the term "white people" emerged. "White people try to avoid this part of history." "White people don't want to take responsibility for these transgressions." He felt uncomfortable. He told me weeks later, in an interview we had as part of this research in a campus bookstore café, that he often worried about proving himself academically at this university. But in this class, he knew he had to prove himself in another way—as a good person, as an ally of the cause, as a nonracist white person.

In class, he felt he was multitasking. He was involved in the lectures and discussions, but he also worried that perhaps his statements, even his thoughts, would confirm the suspicion over his head. He kept his comments at the "tip of the iceberg" level, trying to be inoffensive—for example, saying out loud in class that he really liked the civil rights leader Bayard Rustin, while keeping to himself his ignorance about exactly what Rustin's role in the civil rights movement was. He was too reticent to pursue answers to his questions. He noticed the same thing in the other white student in class. Mostly, neither of them talked. Toward the end of that first day, as the professor went around the room asking the students to say their names and college major, he could hardly find his voice. His name came out more like "head" than "Ted." He sank in his seat.

Things hadn't gotten much better by the time our interview took place halfway through the quarter. I asked whether his tension interfered with his learning. He said he thought so. He described reading a section of St. Clair Drake and Horace Cayton's classic *Black Metropolis* in his dorm room. The section analyzed how

a growing black population affected Chicago city politics in the mid-twentieth century. Ted said he hadn't been confident that he correctly understood the material. Maybe he was biased. Maybe his thinking was unknowingly contaminated by prejudice, stereotypes, or just naïveté. Even alone in his dorm room, his thinking was bottled up, insecure.

Yet he saw the class as positive for black students. "It gives them a chance to show how smart they are," he said. In most classes at his school, blacks are the minority, often a tiny minority. In those classes, they could feel the way he felt in this class. This is part of why he stayed in the class. Turnabout is fair play, but, most important, it was showing him something. He could see how the setting affected his "smartness." The pressure he felt confined his thought to the safe, the inoffensive, the superficial "tip of the iceberg." He hardly had one moment of unself-conscious engagement in the course's material. Yet he could see that the black students, whose experience and numbers enabled them to dominate the class, were unself-conscious, vigorously involved, and apt to say impressive things.

Our interview went on for a while. He had never expected the class to have so much of an effect on him. I explained the ideas my students and I were working on, about how the meaning of social identities like whiteness and blackness were rooted in situational contingencies. I said that was probably why he felt his "whiteness" so strongly in this class: it made him a minority there. Also, the topic of the class made negative stereotypes about whites—as racist or racially insensitive—constantly prominent. This put him under pressure, I explained.

I explained this pressure as a contingency of his identity in the class, his cross to bear. He listened. Encouraged, I became even more didactic, telling him he was probably learning something

valuable. He was seeing into the experience of other groups, and that would give him the breadth he was after, make him more cosmopolitan. He listened. He said that would be nice. But as the interview closed, he said what impressed him most about the class was how it made him feel, how much it affected "smartness," his own and that of his black classmates.

Ted's experience in this class—his lack of participation, his self-consciousness, his hesitancy in thinking about the material, his lower-than-usual performance—would seem to reflect a threat similar to that experienced by women taking a difficult math test, or by blacks taking a difficult academic test of any sort. These threats differ as to form. The group identity involved is different. Ted is a white male, not a woman or a black. The aspect of his behavior affected by this threat was different; Ted was concerned about his lack of participation and self-consciousness in class more than about his performance per se. And the stereotype he worried about confirming was different: he was concerned about being seen as racially insensitive, not as unintelligent. He also knew that he was safe from this pressure in other classes where he was not a minority—unlike the blacks in this class, for whom this class was one of the few places they enjoyed such safety in numbers. Nonetheless, he experienced a stereotype threat in this class that affected him powerfully.

Ted's story makes a straightforward point: identity threat of the sort that has been shown to affect the intellectual performance of women and blacks is likely a general phenomenon that, in some form or another, in some situation or another, can affect anyone. There exists no group on earth that is not negatively stereotyped in some way—the old, the young, northerners, southerners, WASPs, computer whiz kids, Californians, and so forth. And when people with these identities are doing something, or are in a situation for which a negative stereotype about their group is relevant, they can

feel stereotype threat; they can feel under pressure not to confirm the stereotype for fear that they will be judged or treated in terms of it. Identity threats like this—contingencies of identity—are part of everyone's life.

Yet early in our research we had no evidence that this was so, that identity threats are part of everyone's life. We'd shown its effect among strong women math students and among strong African American students. This was some generality: it happened in two groups, not just one. But a skeptic might argue that these two groups, women and blacks, had perhaps internalized the negative stereotype about their group's ability, and perhaps that internalization gave them a susceptibility to stereotype threat, a susceptibility necessary to get the effects we'd gotten in our experiments. Remember the Gordon Allport quote from chapter 3, "One's reputation, false or true, can't be hammered, hammered, hammered into one's head without doing something to one's character." Would someone show these effects if he hadn't grown up with this "hammering," and the self-doubt that Allport believes follows it?

As one often says in the science business, this is an "empirical question," a question that can be answered by research and therefore should be answered by research, not by speculation. Answering this question, we came to see, would take two steps. The first was to determine whether stereotype threat effects indeed required some prior susceptibility to the stereotype. The second was to see whether stereotype threat effects could actually be found in other groups—in reaction to different stereotypes and involving different behaviors.

We began with the first question, stewing about it in our lab group and with colleagues. At the time my colleague Lee Ross's office was across the hall from mine. Capable of seeing a problem from many sides, Lee is often referred to as a social psychologist's

his once introduced him as the Charlie Parker of social psychology. He talks fast—he blows lots of notes with intricate themes, like the jazz saxophonist. You could do a lot worse than take an idea by his office to see what he thought. We talked.

An approach to our problem emerged. We'd have to do what seemed like the impossible: impose stereotype threat on a group in an area of performance where they weren't negatively stereotyped, and thus couldn't have an internalized stereotype susceptibility. If they then underperformed, we'd know that no prior susceptibility to the stereotype was necessary for them to experience this threat. We'd know that stereotype threat in the immediate situation was enough. If they didn't underperform, we would know that a prior susceptibility *was* necessary for them to experience this threat. But how to do this? How could we get a group to experience stereotype threat in an area where they weren't negatively stereotyped?

Joshua Aronson, Michael Lustina, Kelli Keough, Joseph Brown, Catherine Good, and I put our heads together and eventually came up with a strategy. We would put high-performing, highly confident white male math students under the stereotype threat of another group's—Asian Americans'—positive stereotype in math. We would tell them, just as they began a difficult math test that this was a study exploring Asians' strength in math and that the test they were taking was "one on which Asians tend to do better than whites." This would put them in a situation comparable to the one that women and blacks faced in the stereotype threat groups of our earlier experiments. They would be at risk of confirming their own group's math inferiority—this time not directly, but in relation to another group's stereotyped superiority. Their normal frustration on the test, then, could mean that, as whites, they had limited math ability relative to Asians. For white students who care about math, this perception, and the possibility of being judged or

treated in terms of it, could be upsetting enough to distract them and undermine their test performance.

Yet white males have not lived with a stereotype about their group's math inferiority being "hammered into their heads" and should not, therefore, have the internalized self-doubts that such an experience could produce—and that could be a necessary component of the stereotype threat effects we'd observed with women and blacks. So if they underperformed after exposure to the Asian stereotype, we'd know that it was due to the situational impact of stereotype threat and not self-doubts acquired over a long socialization process.

That was our reasoning. Still, we knew it could be argued that white male math students, while not having their group's math inferiority directly "hammered into their heads," might still know the Asian-math stereotype and might have developed some sense of math inferiority relative to Asians. Several considerations told us not to worry too much about this. Knowing that another group is positively stereotyped in an activity doesn't imply that you are inferior because you're not a member of the group. Also, unless you've been close to a sizable population of strong Asian math students, you might not know about, or strongly believe, this stereotype.

Still, as a further precaution, we used only very strong white male math students in this study—Stanford students whose average score on the math SAT was 712 (on the 800-point scale for this test) and whose average self-rating of their math skills was very strong. It didn't seem likely that members of this group would have stereotype-based doubts about their math ability. So if they underperformed after exposure to the positive Asian stereotype, we could say with considerable confidence that it was due to the situational pressure of this indirect form of stereotype threat.

And this is just what happened. The results were dramatic. White males taking the difficult eighteen-item test, represented

as one on which "Asians tend to do better than whites" performed, on average, a full three items worse than white male participants who were told nothing about the test.

The stereotype threat created by this comment impaired the math performance of *exceptionally strong white male* math students. No special self-doubting susceptibility seemed necessary.

At about this time, a different research team, all the way across the country at Harvard University, produced further evidence of the situational nature of stereotype threat—dramatic evidence at that. Margaret Shih, Todd L. Pittinsky, and Nalini Ambady asked the interesting question of how stereotype threat would work for a group of people who had two social identities relevant to a given performance domain, especially if one identity was positively stereotyped in the domain and the other identity was negatively stereotyped in the domain. They had in mind the case of Asian women performing math. Members of this group have two math-relevant identities: their gender identity, which is negatively stereotyped in math, and their ethnic identity, which is positively stereotyped in math.

If stereotype threat is largely a situational pressure, then it might be possible to change the math performance of Asian women, depending on which one of their performance-relevant identities they are reminded of in the situation—their ethnicity or their gender.

Shih and her colleagues asked undergraduate Asian women from Boston area colleges to participate in a study that had only two parts. They first filled out a brief background questionnaire and then took a difficult twenty-minute math test made up of twelve items from the Canadian Math Competition, a prestigious high school competition in Canada. The questions on the background questionnaire were used to remind the women of one or another of their math-relevant identities just before they took the test.

What the researchers found was clear. Women whose background questionnaire reminded them of their gender identity—with questions about whether their dorm was coed and why they would prefer coed living—got 43 percent of the math test questions they attempted correct, whereas women whose background questionnaire asked questions that did not remind them of their gender identity—with questions about their telephone service—got 49 percent of the questions they attempted correct. This comparison essentially replicated the detrimental effect of stereotype threat, among the gender-reminded women, on performance. Importantly, though, when the background questionnaire reminded them of their ethnic identity—with questions about what languages they spoke at home and how many generations of their family had lived in America—this underperformance was eliminated entirely. They got 54 percent of the items they attempted correct. Simply varying which of their identities they were reminded of before taking the twelve-item math test produced an average difference of two points in their score—an effect size that if played out over a typical, much longer test would depress overall performance dramatically.

These findings do not mean that math skills or even internalized math vulnerabilities—as internal traits of these women—had no effect on their performance. These internal characteristics may well have affected the general level of participants' performance. What they do show is that their math performance was further affected by which one of their identities was prominent in the test situation—the identity that exposes them to stereotype threat or the one that doesn't. This makes the important point that whatever the skills or vulnerabilities a group may have, situational differences in stereotype threat alone—a contingency of social identity—are fully sufficient to affect intellectual performance substantially.

And these findings suggest a possible remedy for stereotype threat effects: remind test takers of identities that counter the relevant stereotype. Some years earlier, a then graduate student Kirsten Stoutemeyer and I had inadvertently found evidence of this. Just before women math students took a difficult math test, we reminded them that they were Stanford students. This reminder greatly reduced stereotype threat's effect on their performance. We later found that R. B. McIntyre, R. M. Paulson, and Charles Lord had independently found the same thing. They dramatically reduced stereotype threat's impairment of women's math performance by reminding them, just before the test, of positive women role models.

Science, like life, is rarely definitive. But in light of the emerging results, we had confidence in a straightforward conclusion: stereotype threat isn't confined to particular groups, and if people have to have a susceptibility to experience it, that susceptibility doesn't have to be more than a simple familiarity with the relevant stereotype—and a commitment to doing well in that area of performance. As I described earlier, we also knew that stereotype threat affected the strongest students in the stereotyped group the most—another reason to doubt that self-doubt was a necessary component of one's susceptibility to stereotype threat. The picture was clearing up. Stereotype threat seemed to be a situational pressure that didn't require internal susceptibility to interfere with intellectual performance.

In order to know that this was so, we needed evidence of the breadth of stereotype threat effects. If no internal susceptibility was at the root of these effects, then it should be possible to observe them in a broad variety of groups and in relation to a broad variety of stereotypes. This was the task to which our lab and other social psychologists next turned.

2.

Jean-Claude Croizet is a French social psychologist with postdoctoral training in the United States. He is a man of medium height and, reflecting his penchant for marathon running, a thin build. He is curious and thoughtful, a careful thinker and careful researcher. He comes from the French working class in a society in which social class is as central a social division as race is in the United States. Perhaps this background led him to notice that something was undermining the intellectual and linguistic achievement of lower-class students at the French university where he taught, even the best prepared among them. As he considered how to study what he was seeing, he read the research that Josh Aronson and I had done, showing the effect of stereotype threat on African Americans' test performance.

His question to himself was essentially the generality question: Could the same thing that happened to strong African American students in our experiments be what was happening to lower-class French students in his classes? Could "stereotype threat"—the specific form it took for lower-class French students in French universities—be a cause of their language and performance troubles in college? Was stereotype threat a general part of the human experience?

Jean-Claude and his collaborator, Theresa Claire, gave this possibility its first test. They did an experiment at the University of Clermont-Ferrand, in southeastern France, with upper- and lower-class French college students that followed the experiment we had done at Stanford University with white and black Americans. They gave both groups, one at a time, a very difficult language test (again using GRE-type items). They told half of the participants that

the test was diagnostic of language ability—an instruction that causes stereotype threat for the lower-class students by framing frustration on the test as confirmation of the French stereotype that lower-class people lack language ability. They told the other half of the participants that the test was nondiagnostic of ability, thus making the stereotype about social class and language ability irrelevant to their experience on the test.

The results mirrored those of my experiments with Josh exactly. When the twenty-one-item language test was said to be nondiagnostic of language ability, the lower-class French students performed slightly better than the upper-class French students, averaging 11.4 correct compared with an average of 10.3 correct for the upper-class French. But when the test was said to be diagnostic of language ability—thus making the stereotype about lower-class French students' ability relevant to their performance on this test—the lower-class French performed almost three items worse than the upper-class French. Stereotype threat—here stemming from stereotypes about language ability and social class rather than cognitive ability and race, or about math ability and sex—generalizes to a different group, in a different situation, in a different country and culture.

Back Stateside, Thomas Hess and his colleagues at North Carolina State University tested a generalization of stereotype threat that struck closer to home—that is, for a man of mellowing years like myself. There is, of course, a stereotype about aging and memory. Could the threat of confirming that stereotype actually affect memory among older people? To find out, one study asked older people (average age 70.8 years) and younger people (average age 19.3 years) to study some materials that included a memory test, a list of thirty words that participants studied for two minutes before trying to write down as many words on the list as they could remember. To make the stereotype about aging and memory vivid

for some participants—thereby putting the older people in the group under the threat of confirming the stereotype—they had them first read a newspaper article claiming that age did, in fact, impair memory. Compared with participants who read no such article or who read an article claiming that age had little effect on memory, participants who read the stereotype-evoking article performed worse on the brief memory test, recalling 44 percent of the studied words compared with 58 percent by participants not under stereotype threat. In fact, in the group experiencing stereotype threat, the more aware the participants were of the aging stereotype, the worse they performed. And, as in so many stereotype threat experiments, the proportion of words recalled was worse for the older participants who cared most about having good memories.

As a last illustration of the emerging generality of stereotype threat effects, I remind you of the intriguing research by Jeff Stone and his colleagues at the University of Arizona, described in chapter 1, showing stereotype threat's effect on the golfing performance of athletically inclined Princeton students.

In the nearly fifteen years since its first demonstration was published, research on stereotype threat effects has blossomed throughout the world. The effect has been observed in women, African Americans, white males, Latino Americans, third-grade American schoolgirls, Asian American students, European males aspiring to be clinical psychologists (under the threat of negative stereotypes about men's ability to understand feelings), French college students, German grade school girls, U.S. soldiers on army bases in Italy, women business school students, white and black athletes, older Americans, and so on. It has been shown to affect many performances: math, verbal, analytic, and IQ test performance, golf putting, reaction time performance, language usage, aggressiveness in negotiations, memory performance, the height of

athletic jumping, and so on. No special susceptibility is required to experience this pressure. Research has found but one prerequisite: the person must care about the performance in question. That's what makes the prospect of confirming the negative stereotype upsetting enough to interfere with that performance.

After I make this point in my talks, people often have several questions at once: What exactly does this threat do to a person that causes the interfering effects it has? What can be done to reduce the unwanted effects of stereotype threat in society and in their lives? And perhaps reflecting a certain frustration, they ask, Dear Professor, why can't a person just buckle down and overcome the damn stereotype? I can hear my parents' admonitions to this effect ringing in my ears as I write this. Future sections of the book will deal extensively with the first two questions. But now, sensing that frustration, I will address my parents' view, one shared by many—*I hear you, son, stereotype threat can be pretty bad, but you should use it to motivate you; get out there and prove the stereotype, and those who hold it, wrong.*

CHAPTER 6

Identity Threat and the Efforting Life

1.

Philip Uri Treisman is a mathematician who has created innovative workshops for teaching college math to students from groups whose math abilities are negatively stereotyped—first to black students at the University of California at Berkeley and then to women students at the University of Texas at Austin. Listening to him speak, one has the sense that he, like many mathematicians, learned the pleasure of mind work early in life. He pursues the interesting insight, the idea on which other ideas hinge.

His workshops are that kind of idea, one that earned him a MacArthur "genius" award early in his career. They rely on immersion in challenging math and, perhaps above all, on studying in groups—a technique that his success has helped to disseminate

throughout the nation. Black students in his early workshops at Berkeley, for example, outperformed all other groups in their first-year calculus courses. A substantial portion of all of the American women who have gone on to study math at the graduate level in the United States come from Treisman's math workshops at the University of Texas.

But here I want to stress another part of his work: the essentially anthropological study he did early in his career, the study from which the idea for his workshops came. It began with an observation he made in the first-year calculus course he taught at Berkeley; it was the same observation I was to make later on when I visited the University of Michigan and saw grades of black and white students broken down by their entering SAT scores: black students were underperforming. In his first-year calculus course, among students who had similar math SATs when they entered Berkeley, black students regularly got lower grades than white and Asian students. I have always thought that one of Treisman's major insights was understanding that this situation didn't have to be accepted as normal. This is where his anthropology began.

With their permission, he began to literally follow his students around to observe them in their lives outside of class. He observed how, where, and with whom they studied. He spent time in their dorm rooms, followed them to the library. He hung out with them.

Soon a group difference came into view, one in which blacks and Asians differed the most, with whites in the middle. Asian students studied in groups, formal and informal, more than black and white students. This practice produced powerful advantages for learning calculus. It brought many heads to the homework, so that if one person couldn't solve a problem, someone else could, and that person could explain it. They could spend more time on the concepts involved in calculus, and less time doing the arithmetic of

the homework. (It shortened homework time.) Misunderstandings could be quickly identified and corrected, even when they came from the teaching staff. Asian students also made little distinction between their academic and social lives. Saturday night studying in the library counted as social life for a group of friends bonded, in part, over studying and doing math problems together.

White students studied more independently. But they readily sought help from other students and teaching assistants. They talked shop about calculus outside of class, even compared notes on difficult problems, but focused their social lives less on academics than did Asian students.

Black students, Treisman found, offered a contrast to both styles. They were intensely independent, downright private about their work. After class, they returned to their rooms, closed the door and pushed through long hours of study—more hours than either whites or Asians. Many of them were the first of their family to attend college; they carried their family's hopes. What Treisman saw, sitting on the bunk bed, watching many of his black students work, explained a lot about what was happening to them in his class. With no one to talk to, the only way to tell whether they understood the concept of a problem was to check their answer in the back of the book. They spent considerable time doing this, which made them focus less on calculus concepts and more on rechecking their arithmetic against answers in the book. This tactic weakened their grasp of the concepts. Despite great effort, they often performed worse on classroom tests than whites and Asians, who they knew had studied no more, or even less, than they had. In light of the racial stereotype in the air over their heads, this was a frustrating experience, which made them wonder whether they belonged there.

Discouraged in this way, they didn't talk much academic shop outside of class, sternly separating their academic and social lives.

This, in turn, prevented them from knowing that other students, too, had anxieties and difficulties with their work; it allowed them to think that their problems were theirs exclusively, reflective of their own, or perhaps their group's, inability. As bad, it kept them from seeking help from the teaching staff. After a poor performance, they would redouble their efforts, but in the same isolated way. Intense work would be followed by relatively poor performance. Eventually they'd get discouraged, deciding that calculus and perhaps even Berkeley itself, wasn't for them. Also, having a lower grade in a gateway course like calculus made certain life aspirations less possible to achieve—being a physician, a dentist, or an engineer, for example. Already toward the end of their freshman course in calculus, these students, who had entered Berkeley with the highest aspirations just months earlier, were beginning to contract their goals. They'd give up trying to become a doctor. They'd try becoming a public health worker instead; that wouldn't require calculus.

Jeff was one of the students Treisman interviewed. He'd come to Berkeley from one of the best parochial high schools in San Francisco. His math SAT was close to 600, putting him in a high national percentile, especially for African American students. He was strongly motivated and came from a supportive family and community. Here is Treisman's description of his freshman year experience:

> In our first meeting, Jeff described to me with barely contained anger two white students who sat next to him during a calculus lecture reading Playboy and drinking beer from bottles they had concealed in a paper bag. Before the class midterm, he likened their behavior to blasphemy and predicted with evangelical fervor that "Justice will surely prevail." When he learned, several weeks later, that these white students received A's and he a C– on the test, he was devastated. Shaken, Jeff went to see his teaching assistant as much to apologize for his poor performance as to seek help. The TA was quick to suggest that Jeff was not adequately prepared for the university and that he should consider transferring to a community college. Jeff withdrew from Berkeley at the end of his first term and, taking his TA's advice, enrolled at San Francisco City College the following semester.
>
> Several years later, when we spoke again about his experience at the university, Jeff described the success of the beer-drinking students as "only the first blow." The final blow came when he received his first-term grades. He had not even predicted correctly which courses he would fail. Jeff's Subject A (remedial English) instructor, for example, had been so encouraging, so giving of her time: he could not understand how she could have failed him. He felt betrayed. He felt as if he were wandering in a maze. He could neither tell what was important in his courses, nor what he might do to improve his performance were he to try again. In addition to academic problems, Jeff had had a string of misunderstandings with administrative personnel in several campus offices. It seemed to him that these individuals were continually reneging on promises to him. He came to feel that he did not belong at the university.

Of course, things like this happen to other college students, too, regardless of their group identities. The very commonness of contracted aspirations early in college life makes it difficult to see a group pattern. As I've said, Treisman's insight was noticing this pattern and then going behind the scenes to understand it. There he saw black students—in an effort to succeed where their abilities are negatively stereotyped—following a strategy of intense, isolated effort, a strategy that often set them up for defeats and discouragements. They were trying hard, they were taking my

father's advice (and probably their own father's advice), but they were trying to do it all by themselves, in a class where other people were working more happily and efficiently together, pooling their intellectual resources.

2.

My own suspicion that "over-efforting," if I can call it that, among the black students that Treisman had observed might be a general phenomenon, a broad fact of life, was strengthened by a conversation I had with a good friend, Carol Porter, on a visit some years ago to Princeton University.

Carol is a social psychologist who has devoted much of her career to bettering the undergraduate experience at universities like Princeton and Stanford. On the occasion in question, she and her dean had invited me to Princeton to consult about minority student life there. As the visit came to an end, Carol rather offhandedly told me about something she and others had seen while advising students about organic chemistry. This course is a national gateway to medical school; doing badly in it can derail your chances of getting in. It's also difficult, so Princeton students have developed strategies for getting through it. Some students sit through it one entire time before taking the course a second time for a grade. Others take the course during the summer at a presumably less competitive school and then try to have the credit for it transferred back to Princeton. When advisers see students having difficulty in this course, they might suggest one of these strategies so that the students don't stay in the course, get a bad grade, and undermine their chances for medical school.

Carol said that when this advice is offered to white and Asian students, most of them readily take it, dropping the course for a

grade and following one of the alternate strategies. To Carol's surprise, though, when the advice is offered to black students having trouble, they more often rejected it, persisting in the course past the point when one can drop it without getting a grade, and thus often getting a low grade that jeopardized their medical school chances.

By this time, I knew about Treisman's research. What Carol was telling me seemed like another expression of what he had observed. It was as if the black students she described were staying in this course to disprove the stereotype hanging over their heads—following their and my parents' advice. They pushed on when a person not facing this "allegation" might have simply switched to a better strategy. Over-effort at Princeton, too?

"Over-efforting" had now popped up in several achievement contexts, enough to suggest that under some circumstances it might cause academic underperformance. Or so David Nussbaum and I thought as we surveyed these instances. David was a new graduate student who had been a philosophy major as an undergraduate at Yale. He loves to, as they say in philosophy, "parse" questions, closely analyzing their meaning and logic. We faced an interesting question worth parsing: Was the syndrome of over-effort and self-sufficiency evidenced in Treisman's research, and the observations of Carol Porter's organic chemistry advisers, caused by stereotype and identity threat? Or was it perhaps a general characteristic of African Americans that stems from a socialization process—again, I hear my own father's words in my ears—that stresses working twice as hard as others to succeed? Perhaps that advice gets internalized as a principle of conduct and fosters intense effort even in situations that pose no identity threat.

As I said, David is a good parser of questions, and this led to a simple experiment with two aims. The first was to see whether the over-efforting syndrome could be evoked in a laboratory experi-

ment; the second was to test, if it could be evoked, which of these two understandings of it was the more accurate.

We focused the experiment on the solution of anagrams, a task that involves rearranging sets of scrambled letters into meaningful words. Anagrams can be very easy to solve, as in "ebd" being easily rearranged into "bed," or very difficult to solve, as in "ferhziidsaenncd" being rearranged into "disenfranchised." In the first part of the experiment, we gave black and white Stanford students twenty very difficult anagrams to solve. We wanted the task to be hard and frustrating, something on which they knew they hadn't done well, something like a calculus or an organic chemistry class perhaps. A second problem-solving task was to include both anagrams and analogy problems. We asked them to pick as many anagram problems to include on this second task as they wanted to. This measured how much our participants wanted to continue trying to solve the kind of anagrams they had just had trouble with on the first task—this being analogous to how much students having trouble with organic chemistry might want to stay in the course and risk failure. We got a straightforward answer: they didn't want to do very many. When the anagram task was presented as just a laboratory task, neither black nor white participants agreed to do many more of them—a polite four or five at the most. When it was just a laboratory task, there was no over-efforting on the part of any participants. They were able to stop doing the difficult anagrams the way white and Asian students had been able to stop and reschedule a frustrating organic chemistry class.

Another group of participants, however, went through exactly the same procedure, except that they were told the anagram task was a measure of cognitive abilities. For the black students in this group, this labeling made the stereotype about blacks' cognitive abilities relevant to the anagram task. Their frustration on the task could now confirm the stereotype about their group's abilities. Unlike the whites in this group, then, they were now under stereotype threat.

How would they now respond to the invitation to do more anagrams on the second task? Would they do fewer to perhaps avoid stereotype threat? Or, as students identified with their cognitive abilities, would they follow my father's advice and do more to try to disprove the stereotype? Again, we got a clear answer. They behaved just like the black students Treisman had observed in the Berkeley dorm rooms, and just like the students Carol Porter had described in Princeton's organic chemistry course. They persisted, big-time. White participants in this group, being under no stereotype threat, agreed to do the same polite four additional anagrams that participants in the no stereotype threat groups had agreed to do. Black students in this group, however, agreed to do a whopping eight additional anagrams, twice as many—over-efforting to the max.

We thus had answers to both of our questions. Academic over-efforting among black students could be evoked in the laboratory—easily so. It's a real phenomenon. Second, it seems to be caused by the identity pressure of stereotype threat. It didn't happen without this threat, when the anagrams were presented as just anagrams, as puzzles unrelated to cognitive abilities. Black participants weren't just supermotivated students. When they weren't under stereotype threat, they didn't try any harder than anyone else. But when there was a stereotype to disprove, they tried twice as hard as everyone else—expending precisely the amount of extra effort that my father's classic piece of advice specifies.

If these black students had academic troubles, they wouldn't seem to have come from a tendency to give up in the face of frustration and stereotype pressure. They tried extremely hard in the face of pressure, like their counterparts in the organic chemistry

and calculus courses I described. They didn't need parental prodding. When the stereotype about their group's abilities was in play, they tried extra hard on their own.

3.

So is this extra motivation always a problem for performance and achievement? Could literally millions of parents all be wrong? In the African American community, Jackie Robinson's story is legendary. *Ebony* magazine has run a page every month for over fifty years featuring people who have broken down one racial barrier or another. Using the motivation to overcome barriers and stereotypes to fuel achievement is a central theme of black life in America, as it is for other groups contending with negative stereotypes—women, for example. Does this motive always backfire when it comes to performance and achievement?

Most of the stereotype threat research has focused on difficult work at the frontier of a person's skills—demanding math tests, IQ tests that get progressively more challenging, verbal tests pitched to the limit of one's skills, rigorous college curricula, and so on. Frustration on these tasks makes the stereotype personally relevant as a plausible explanation for why they are having the frustration. It threatens them with the fear of confirming the negative stereotype, which causes distracting emotion and thoughts. Performance gets worse. The risk of confirming the stereotype gets worse. A vicious cycle ensues. This is how the extra motive to disprove the stereotype seems to interfere with performance at the frontier of one's skills—in organic chemistry, for example. (The next chapter examines these processes more closely.)

But what happens when you perform easily and well in a domain where your group is negatively stereotyped—that is, what

happens when the task is well enough within your skill level that you don't experience much frustration in doing it? A performance like that is essentially a refutation of the stereotype, and since it's a refutation, and since you can do it pretty easily, you might imagine being especially motivated to perform well. In that kind of situation, the stereotype-disproving motive might produce better performance.

Two social psychologists at the University of Kansas, Laurie O'Brien and Christian Crandall, had independently decided to test this exact idea and came up with a straightforward experiment to do it. They gave a sample of men and women students at the University of Kansas one difficult and one easier math test. The easier test asked them to do as many three-digit multiplications as they could in a ten-minute period. The difficult test asked them to do fifteen algebra problems from the math section of the SAT in the same period. One group took the tests under stereotype threat. Participants were told the tests had previously shown gender differences. The other group took the tests under no stereotype threat. Its participants were told that these particular tests did not show gender differences. What happened supported O'Brien and Crandall's reasoning. On the difficult test, women did worse under stereotype threat than women not under stereotype threat and worse than men in either group. But the tables were turned on the easier test. *Women under stereotype threat did better than women under no stereotype threat and better than men in either group.*

At the frontier of their skills, stereotype threat and the motive to disprove the stereotype hurt performance, presumably through the set of interfering reactions described earlier. But back a ways from that frontier, where the task was easier and the frustration less intense, trying to disprove the stereotype boosted performance beyond that of all other groups.

Here was a point for the parents. Presumably, it was seeing

something like this that convinced my father and millions of other parents that the drive to defeat stereotypes could be harnessed for achievement. It can be. The O'Brien and Crandall experiment shows that when the work is manageable, an extra motivation to disprove a stereotype can raise performance to a level higher than it would otherwise reach.

What does this motive to "disprove" the stereotype look like in real life? Does it turn people into superachievers and workaholics? Valerie Jones, a creative graduate student in my lab with a penchant for doing research in real-life situations, and I did a simple survey to shed light on this question. The idea was this: in workplaces where women are numerically underrepresented, they might experience more pressure to prove themselves by working hard and disproving negative stereotypes than in workplaces where women are less underrepresented. Valerie surveyed forty-one women attending a local Silicon Valley conference on women in technology. She asked them questions about the number of women in their workplace and about how much pressure they felt to prove themselves by working harder. The results were very suggestive. Compared with women from the less underrepresented settings, women from the more underrepresented settings reported feeling substantially more pressure to prove themselves through work and reported more behaviors that reflected this pressure, like getting to work earlier, leaving later, and engaging in fewer activities outside of work. In real life too, then, there is evidence that women can use the stereotype-driven pressure to prove themselves as a motive for good—or at least as a motive to work harder.

But is this an unalloyed good? When all of these research findings are taken together, one might have to say perhaps not. The problem is that the pressure to disprove a stereotype changes what you are *about* in a situation. It gives you an additional task. In addition to learning new skills, knowledge, and ways of thinking

in a schooling situation, or in addition to trying to perform well in a workplace like the women in the high-tech firms, you are also trying to slay a ghost in the room, the negative stereotype and its allegation about you and your group. You are multitasking, and because the stakes involved are high—survival and success versus failure in an area that is important to you—this multitasking is stressful and distracting.

It has major consequences. First, the stress and distraction it causes (as we shall see in more detail in the next chapter) can directly interfere with performance, especially when what you are doing is at the limits of your skills and knowledge—precisely where you need to be working in order to learn and develop. Also, as we can see from Jeff's story and Treisman's observations, it can cause highly inefficient strategies and rigidities. You are not just learning or performing; you are also refuting a stereotype. So you can't just drop organic chemistry for credit and plan to retake it the next semester. That could feel as if you were confirming the stereotype, as a characterization of yourself and of your group. You have to hang in there, even if it costs you your preferred career path.

And when you realize that this stressful experience is probably a chronic feature of the setting for you, it can be difficult for you to stay in the setting, to sustain your motivation to succeed there. Disproving a stereotype is a Sisyphean task; something you have to do over and over again as long as you are in the domain where the stereotype applies. Jeff seemed to feel this way about Berkeley, that he couldn't find a place there where he could be seen as belonging. When men drop out of quantitative majors in college, it is usually because they have bad grades. But when women drop out of quantitative majors in college it usually has nothing to do with their grades. The culprit, in their case, is not their quantitative skills but, more likely, the prospect of living a significant portion of their lives in a domain where they may

forever have to prove themselves—and with the chronic stress that goes with that.

This is not an argument against trying hard, or against choosing the stressful path. There is no development without effort; and there is seldom great achievement, or boundary breaking, without stress. And to the benefit of us all, many people have stood up to these pressures. (We will read about some in the next chapter.) The focus here, instead, is on what has to be gotten out of the way to make these playing fields more level. People experiencing stereotype threat are already trying hard. They're identified with their performance. They have motivation. It's the extra ghost slaying that is in their way.

There is a syndrome here, one that my father, I, and many other parents may not have fully appreciated. Under limited circumstances, the motivation to disprove stereotypes can have constructive effects. But at precisely the point where performance and ease of functioning are most important—at the limits of one's skills and knowledge as one tries to develop and grow at school and work—this form of motivation very often backfires. There, ironically, it can cause the very group underperformance that so many parents had hoped to coach their children around.

Chapter 9 will take up solutions to this problem, things that individuals and institutions alike can do to reduce this pressure and the underperformance it causes. But it's important not to leave this chapter without noting that Treisman found a solution to Jeff's problem that worked dramatically well, and that thereby both reinforces the analysis emerging here and shows that cures derived from it can be effective and feasible.

He conceived a program that, as far as studying calculus is concerned, and put a bit crudely, tried to get black students to study more like Asian students—in particular, to work in groups, groups that spent a lot of time (at least six hours per week) together

outside of class talking about calculus, among other things. He expected the same advantages he'd observed in the Asian groups: with multiple people studying the problems together, they could spend proportionately more time learning critical concepts and less time doing answer-checking arithmetic; they could more accurately gauge their understanding and proficiency; they could be more certain about interactions with the teaching staff; and so on. It worked. They got better grades; the black students in Treisman's workshop now earned better first-year calculus grades than either the white or Asian students in the regular calculus classes at Berkeley. If only Treisman had developed these in time to help Jeff.

Treisman's workshops teach the skills of group learning that directly make learning calculus easier. But what were these skills correcting for? Here his anthropological research was revealing. They were correcting a tendency among these black students to protectively isolate themselves and to over commit to self-sufficiency—strategies that might help them avoid people who they worried might stereotype them, but that would also isolate them from help they needed. It wasn't that these students lacked parental advice. It was following that advice to distraction that was the problem. Nor was getting them to care about their work. What Treisman solved was how they could better implement the caring they already had.

In recent years, a number of ingenious scientists have begun to uncover precisely what this predicament of identity does to a person, and precisely how the things it does to a person cause the performance and persistence problems that launched this research. It's in seeing these effects that I believe one finally sees the power of this predicament and why, for example, it makes my father's advice—necessary though it may be—insufficient.