

Educational Theory, Practice, and Policy and the Wisdom of Social Psychology

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Abstract

The power of psychologically based interventions has garnered much interest in the general public and in the social sciences, especially in social psychology. Among the lessons that such social-psychological interventions provide are two of special importance for educational practice and social policy. The first is that different students can perceive the same classroom differently and that these perceptions can lead to substantial differences in outcomes. The second is that timely and well-placed interventions, almost irrespective of their duration, can change students' perceptions of school and the classroom for the better. Randomized double-blind experiments show that such change is possible and can trigger lasting improvements in students' academic trajectories. In the context of closing achievement gaps, these insights offer practical solutions and a better understanding of motivation. This article focuses on how wise interventions and insights from social psychology can further apply to improve human affairs, both inside and outside the classroom.

Keywords

education, stereotype threat, affirmation, achievement gap, identity threat, mindsets, intervention

Tweet

Social-psychological solutions can dramatically improve educational practice, policy, and outcomes.

Key Points

- Psychology matters. Even when in the apparently same objective environment, the perceptions and beliefs that shape students' experience and outcomes can differ markedly.
- Even brief psychologically based interventions can lead to lasting improvement in student achievement.
- Positive change in students who chronically underperform or misbehave requires that we consider how their perceptions of the classroom affect them.

Introduction

Of social psychology's many insights, two are especially important for education policy. First, people's perceptions of a situation matter. Students can perceive the same classroom differently. This can lead to differences in their motivation and performance even among those of similar aptitude.

Classic social-psychological research attests to the power of perception in education (Bandura, 1986; Dweck, 1999; Steele & Aronson, 1995). For example, how students deal with school's inevitable setbacks is affected by how much they see intelligence as fixed or malleable, and how much

they see themselves as competent or not. Children who see intelligence as malleable, as changeable like a muscle, tend to enjoy dealing with mistakes as they see them as opportunities to learn (Dweck, 1999). By contrast, children who see intelligence as fixed tend to see mistakes as negative judgments of the self and withdraw effort. For the student who sees intelligence as fixed, the classroom is a more threatening place, a place that impedes their curiosity and growth. Whether people see an environment as safe or threatening shapes their motivational resilience.

That a student's psychological makeup can be harnessed to promote educational gain forms social psychology's second insight relevant to educational policy. Changing how students think and feel about the classroom can improve their performance and long-term trajectory. Expert tutors exemplify what social psychology has shown: Not only does a student's psychology matter, it can change for the better (Lepper & Woolverton, 2001). This knowledge underlies much of what expert tutors do and do not do. Expert tutors take the perspective of their students and are sensitive to their changing emotional experience. These tutors refrain

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from the practices of less effective tutors, such as praising students' intelligence. Although this appears to be a sound practice, it can backfire if it does not ring true or leads the student to value ability over effort (Mueller & Dweck, 1998). Instead, expert tutors use strategies better attuned to students' psychology. Rather than give direct answers, they ask questions to elicit the answer from the student, a Socratic approach that places agency in the child. Rather than praise students' ability, they present a problem as especially challenging. Children thus perceive that struggling is simply a sign of the difficult nature of the problem, whereas success must be a sign of their skill. Children who receive such empathic tutelage consistently show substantial gains in learning; this is true even for those with a history of poor performance (Lepper & Woolverton, 2001). A major implication of social-psychological research like this is that outcomes once thought to be stable are in fact more malleable than commonly assumed (see Garcia & Cohen, 2012; Steele, Spencer, & Aronson, 2002). Changes in student psychology can have a large impact on their learning, test performance, and even college prospects.

Of course, not all students can have an expert tutor. However, because of social-psychological research, they can experience practices that reliably improve their outcomes.

A Social Psychology of Education: The Wisdom of a Discipline

A review of social psychology's many insights has concrete implications for educational practice and policy.

Performance Is Not Potential

When they explain the behavior of others, people too readily assume that it reflects the internal qualities of the actor rather than the situation. This is known as the fundamental attribution error (Ross & Nisbett, 2011). Awareness of this social-psychological insight, above all others, is key for educational practice and policy. It suggests that we should guard against the assumption that a student who chronically underperforms or misbehaves has low ability, a learning disorder, or a rebellious nature. Instead, we should consider what aspects of the classroom, both obvious and subtle, drive the student's behavior. The remarkable power of seemingly minor aspects of the classroom speaks of this imperative. Consider that randomly singling out some children as "intellectual bloomers" to their teachers led these students to earn higher IQ test scores at the end of the year (Rosenthal, 1994; see Raudenbush, 1984). Consider that allowing children to wear a Superman cape tripled the number who resisted a temptation to wait for a larger reward, an exercise in self-control predictive of later life success (Karniol et al., 2011). These examples not only demonstrate the extraordinary malleability of intellectual performance and self-control but also the power of situational forces on them. They also imply that

consistent outcomes, including problematic ones like underperformance, may be the product of stable situational forces. Displayed performance does not necessarily reflect performance under optimal conditions.

The Subjective Situation Matters

Because children in the same classroom share the same teacher, classmates, and curriculum, they are assumed to be in the same general situation. Of course, their situation can sometimes be different. A teacher may treat boys and girls or minorities and non-minorities in different ways. African American and Latino American students, for example, are less likely to get critical feedback about how to improve than are White students (Harber et al., 2012). More minorities also get placed in remedial tracks, an academic death sentence according to some scholars (Grubb, 2009).

Yet even when the objective situation is more or less the same, students' subjective experience can vary considerably. Research on stereotype threat shows how stereotyped minority students see a common school ritual, the standardized test, differently. For minority students, the worry that such tests could be used to confirm a negative stereotype about their ethnic group's intelligence makes difficulty on them more troubling (Steele & Aronson, 1995; Steele et al., 2002). This worry can undermine performance because it diverts mental and motivational resources away from the test. Stereotype threat is so widespread among African American students that simply reframing a test as "not diagnostic of ability"—thus unlinking it from the stereotype—substantially improves their performance (Steele et al., 2002). Although modifiable, stereotype threatening situations occur repeatedly in school, and the persistence of racial achievement gaps are, in part, explained by their cumulative effects (Steele et al., 2002; see also Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009; Garcia & Cohen, 2012).

"It's Hard, But I Can Do It"

People want to see themselves as having self-integrity, as being a good and able person (Steele, 1988; see also Cohen & Sherman, 2014; Sherman & Cohen, 2006). The possibility of being stereotyped or seen as somehow lacking or not belonging can prove threatening, especially when chronic. This repeated stress can depress performance, motivation, and health (Cacioppo & Patrick, 2008; Deci & Ryan, 2012; Sapolsky, 2004).

Social-psychological interventions can change how students perceive their experience so what they saw as a threat becomes a challenge (Wilson, 2011). In one line of studies, when given written critical feedback from their middle-school teachers on an essay they wrote, African American children responded less well than their White peers (Yeager, Purdie-Vaughns, et al., 2014). These students, unlike their White peers, seemed to see the feedback as a judgment rather

than encouragement to reach a higher standard, even when given identical feedback (Cohen & Steele, 2002; Cohen, Steele, & Ross, 1999). However, when the teacher appended a personal note that expressed a belief in the student's ability to reach a higher standard, the percentage of African American students who revised their essay rose from 24% to 64%. The note may seem a minor event. But to those vigilant to being seen as limited, it can matter a lot.

While this intervention reframed a specific occurrence of critical feedback, another sought to reframe children's entire experience of school by changing their concept of intelligence (Aronson, Fried, & Good, 2002; Blackwell, Trzesniewski, & Dweck, 2007; Good, Aronson, & Inzlicht, 2003). In one intervention, during a study-skills workshop, urban middle schoolers learned how intelligence can grow through hard work. Among other things, they reviewed and rehearsed scientific information about the plasticity of the brain (Blackwell et al., 2007). Children who received only study skills training showed the typical downward trajectory in middle-school math grades. But those who also learned about the brain's malleability did not. Moreover, according to teacher nominations, 3 times as many students in the growth workshop as in the control workshop increased their motivation.

In another intervention, the transition to college was reframed to bolster students' sense of belonging on campus (Walton & Cohen, 2011). First-year college students reviewed testimonials and statistics from older students at their school. These conveyed that all students, regardless of race or gender, experience difficulty in adjusting to college. In spite of these early troubles, it was further conveyed, most students came to feel at home. Participants were thus led to see doubts about belonging as normal and transitory rather than unique and fixed (see also Wilson, 2011). This intervention boosted African Americans' three-year cumulative grade point average (GPA) relative to a control group. It closed the achievement gap between them and their White peers by roughly 50%. Strengthening their sense of belonging not only improved academic performance, but also general well-being. By the end of college, these students also reported better health and happiness.

Some disadvantaged students attend schools where few of their fellow students share their background. Although seeing themselves as similar to their peers can help, acknowledging their unique background can also benefit them. College students who were the first in their families to attend college watched a discussion panel of senior students who conveyed that their social background was relevant to their college experience (Stephens, Hamedani, & Destin, 2014). Although it might be a source of problems, having to solve these would give them an opportunity to grow that their peers might not have. Students who heard the additional information about first-generation students not only made greater use of college resources but also earned a higher cumulative GPA.

Classroom structure can bolster or undermine students' sense of integrity through how opportunities to demonstrate competence are presented. In one study, two groups of children with a history of poor performance in math took a seven-session, self-directed math-learning program over several days (Bandura & Schunk, 1981). For one group, their goal was presented as large and distant: completing 42 pages of instruction by the end. For the other, the goal was presented as small and proximal: completing six pages for each of seven sessions. Although objectively equivalent, the latter seemed psychologically more attainable. Children given the proximal goal expressed higher confidence in their math skills and achieved final test scores almost twice as high as children presented with the more distant goal. At the end of the program in a free response period, distant-goal children completed only about 1 math problem. Proximal-goal children completed almost 14. The latter group also outperformed students given no goal and students who went through the same program without any goals suggested. When goals are distant and large, any step seems trivial. This can create a sense of futility. When goals are proximal and seen as attainable, each completed step seems an accomplishment on its own and fuels engagement. This study shows how a subtle environmental factor—in this case, the goals suggested to students—can bolster students' sense of adequacy and, through this, their performance, grit, and enthusiasm in a lasting way.

This initial insight expands into a variety of interventions. One study encouraged high school students in a science class to apply the topics they learned to their everyday life. This led them to see the subject matter as personally relevant and meaningful rather than academic and divorced from their personal lives. The intervention boosted the science grades of those with low expectations for success (Hulleman & Harackiewicz, 2009). These practices can be woven into discussions inside and outside the classroom. One intervention encouraged parents to talk to their high school-aged children about how the fruits of science and math saturated their lives (e.g., video games and cell phones). Relative to a control condition, the intervention increased the number of science and math courses students took over their last 2 years of high school (Harackiewicz, Rozek, Hulleman, & Hyde, 2012). Indeed, the effect of the intervention compared favorably with the effect of parental education. A final intervention encouraged high school students to see their coursework as relevant to noble purposes by asking them to identify what they found "unfair" about the world, an appealing topic for adolescents; how they wanted to change the world someday; and how their coursework might help them achieve these goals. Compared with students in a control condition, students in the intervention condition earned higher grades in their math and science classes (Yeager, Henderson, et al., 2014). This intervention, as do others, alters how students perceive motivationally challenging circumstances so as to support their sense of personal integrity—of competence, belonging, and purpose.

The Many Heads of Motivation

In a society that demands us to meet economic needs, it is easy for people to overestimate their power to motivate. The overvaluation of material rewards, from gold stars to golden parachutes, obscures the importance of purpose, social connection, and the need to see ourselves as competent (Deci & Ryan, 2012). The widespread use of incentive programs, which reward better achievement with money or material rewards, attests to the popularity of this narrow conception of motivation in the public and in other social sciences. With a few exceptions, such programs have been disappointing. In fact, they have sometimes even undermined motivation in the long term (Deci & Ryan, 2012; Lepper, Sethi, Dyaldin, & Drake, 1997). However, focusing on intrinsic rather than extrinsic motivators has consistently proved effective. The following examples give a flavor of such motivators. When the intrinsic value of educational content was emphasized with the phrase, “This will contribute to your personal development,” rather than a phrase highlighting extrinsic value, “This will increase your chances of getting a well-paid job,” adult students felt more motivated and learned more (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004). When employees read stories that illustrated how their job could make a difference in the world rather than advance their skills, they clocked more hours and worked harder (Grant & Berg, 2011). Intrinsic motivators can prove so powerful that seemingly minor instructions can have large effects. Simply allowing students to choose their own icon and to name their spaceship in a space-fantasy math-education computer game improved their motivation and learning a week later (Cordova & Lepper, 1996). What motivates us is far more diverse than we commonly think.

Change Is a Process, Not an Outcome

Changing the “nature of a thing” should not be the aim of an intervention. Rather, it should alter the process that produces the thing (Lewin, 1948/1997). Desired outcomes, whether performance, health, or productivity, are best seen as the output of an ongoing process. At timely moments the process can be redirected (Wilson, 2011).

The interventions reviewed here are grounded in this perspective. They change the processes involved in how students see their environment and, sometimes, how their environment responds back (Cohen & Sherman, 2014). As a result, students experiencing these interventions are less likely to perceive ongoing adversity in a way that “gets under their skin.” For example, African American students’ enthusiasm for school rose and fell with their latest success or failure. But their motivation and enthusiasm were shielded from these daily slings and arrows if they had learned that doubts about belonging were normal and short-lived (Walton & Cohen, 2011). An intervention can act like a new lens that provides a new perspective from which to see the world,

rather than just a one-time shot in the arm designed to deal with temporary discomfort.

No Process Is an Island

No psychological process occurs in isolation. Its effects depend on both temporal and situational contexts (Garcia & Cohen, 2012; Lewin, 1948/1997). Temporal context refers to a situation’s duration. Whether a situation lasts a millisecond or goes on for years matters. The middle-school situation encompasses 2 to 3 years. In such a temporal context, psychological processes do not necessarily occur and then abruptly end. Rather, their outcomes trigger cycles that echo through time, like the ripple of a stone dropped in a pond.

For instance, test anxiety can trigger a process in which the fear of performing poorly creates stress that can then cause one to fail an exam. Failure can then worsen the fear, increase stress, and undermine performance further, in a repeating cycle. The original stressor need not persist for the cycle to take over and drive outcomes (Cohen & Sherman, 2014). The cycle is instead sustained by its own consequences. The output of the process feeds back as its input, making performance settings increasingly stressful and taxing of mental resources (Cohen & Garcia, 2008). Of course, the longer the situation lasts, the more likely it will trigger cycles that undermine the students’ sense of global adequacy. Such feedback loops permit subtle, simple processes to generate large, complex results.

In the larger situational context, several processes can occur simultaneously, playing off each other to propel a student like currents in a river (Lewin, 1948/1997). In one study, middle-school adolescents completed a values affirmation, an intervention, discussed more fully below, that prompts students to reflect on cherished personal values. These students not only earned a higher GPA but also were less likely to be assigned to a remedial track or to repeat a grade (Cohen et al., 2009). Avoiding a failure channel like remediation or grade retention, even if only by the narrowest of margins, can improve a child’s academic trajectory and even life outcomes. Remediation tends to reinforce stigmatization and seems to be a gateway that sets low-performing minorities on the road to further failure (Grubb, 2009). Interventions can thus have large effects when they change not just students’ perception of the situation, but the situation itself.

The large and enduring effects that follow from some interventions nearly always occur not in spite of other processes in an educational setting but because of them (Cohen & Sherman, 2014; Yeager & Walton, 2011). The interfacing of the intervention’s processes with those already in the situation produces the benefits. Interfacing can lead to synergy: Interventions situated in the right place and time in the river of influences yield greater benefits than those that could be produced by the same intervention on its own.

Catalysts, Not Magic Bullets

Nearly all interventions that affect important outcomes are faced with the question, “How can it be disseminated on a wide scale?”

But if the effect of any intervention depends on the context, this is the wrong question. Instead one should ask, “Who can it help, and when and where can it help them?”

When it occurs in the right place, at the right time, and for the right people, a social-psychological intervention acts as a catalyst (Cohen & Sherman, 2014). It activates other forces in the environment that drive key outcomes. But those forces must be present. For example, an intervention to increase students’ self-confidence improved their performance but only if accompanied by effective instruction (Menec et al., 1994). A trust-building intervention did not improve outcomes on its own but increased students’ use of good teacher feedback (Yeager, Purdie-Vaughns, et al., 2014). A values-affirmation intervention did not work in isolation but led students to avoid the remedial track and enroll in more advanced classes (Cohen et al., 2009). The impact of psychological interventions depends on many contextual conditions. Chief among them are institutional resources that recognize and reinforce student growth (Cohen & Sherman, 2014). Genuine opportunity, plus the psychological readiness to seize opportunity, is the key.

Successful social-psychological interventions are not like wonder drugs injected into a person’s psychological system that remain active for a long time (Lewin, 1948/1997). Instead, they are like a spark that touches off a chain reaction. Assets once constrained are unleashed (Cohen & Sherman, 2014). If an intervention eases a child’s threat, the child’s skills and the teacher’s instruction can assert a fuller impact. Following from this analysis is the notion that an intervention tailored to the individual and the context will be more fruitful than a one-size-fits-all approach.

Timing Matters: In the Beginning and Near the Threat

Timeliness is another insight that social psychology offers education. Knowing the appropriate timing of an intervention is as important as its particulars. There are two key times to intervene on a process: its beginning, and near the point when it causes people to feel threatened, either just before or just after.

Studies of a values-affirmation intervention illustrate the importance and complexity of timeliness. In one study, the intervention began early in students’ transition into the seventh grade, an often stressful and troubling time (Cohen, Garcia, Apfel, & Master, 2006). Introducing an affirmation intervention during this sensitive period helps students maintain a positive self-narrative in a non-threatening and indirect way. Students have the chance to reflect on the values they hold as important, even those that have nothing to do with

school. This practice echoes the indirect practice that many expert tutors use when they ask about a student’s hobbies and interests before getting down to the business of studying (Lepper & Woolverton, 2001). From the outside, this may seem inefficient. But from a child’s perspective, it signals that the tutor is trying to appreciate the child’s whole self, not just another struggling student.

In a series of studies, seventh graders at a suburban middle school were randomly assigned to one of two groups. Students completed a values-affirmation writing exercise in one group (Cohen et al., 2006; Cohen et al., 2009). In the other, they completed a non-affirming or control writing exercise. Those writing about values read a list of values (e.g., relationships with friends and family, creativity, religion) and identified those most important to them. They then wrote about why the values were important to them. Students completing the non-affirming writing exercise wrote about a personal value that was unimportant to them or about a neutral topic like their afternoon routine. The intervention was timed to key stressors such as exams and occurred a few times throughout the year.

African American students who completed the affirmation intervention did better in school than African American students who did not. Twenty percent of those in the latter group earned a D or below in the course in which the intervention was given, compared with only 9% of students writing about an important value. This improved academic performance not only spilled over to students’ other courses but also persisted. At the end of middle school, 2 years later, the affirmed students had higher GPAs in their core courses than their non-affirmed African American peers. Although the intervention did not eliminate the achievement gap, it closed it by approximately 30%. Taking place in a school with adequate resources, the intervention required only a small time commitment, had a modest cost, and proved effective at a developmentally sensitive time.

Reconnecting with aspects of themselves unrelated to threats at school allowed these students to pull back from the classroom situation. This permitted them to see threatening experiences from a more expansive perspective of global self-integrity. From this vantage point, a specific threat, such as the prospect of being stereotyped, becomes less psychologically dire. This is especially important during a vulnerable developmental period like adolescence.

A follow-up study demonstrated how even modest differences in timing matter a lot at the beginning of a process (Cook, Purdie-Vaughns, Garcia, & Cohen, 2012). In this study, all middle schoolers wrote about their important value. However, when they wrote was randomly varied. Some did it during the first 2 weeks of the transition into the seventh grade, whereas others did so a little later, during the fourth week of school, the time it was generally done in the earlier research.

Differences in timing mattered. Children who had completed the affirmation earlier earned higher grades at the end

of the term than those who had done it 3 weeks later. In fact, the impact of early timing was virtually the same as the impact of providing the intervention at all found in previous research. Intervening early in key transitions can yield large effects because early outcomes compound in a feedback loop (Cohen et al., 2009). When given at the beginning of the year, the affirmation fortified students' sense of integrity against a rapidly escalating cycle of threat.

Transitions, because they require moving from one more or less stable situation to another, can be stressful, exciting, or both. By definition, they involve the ending of one period and the beginning of another. This can create uncertainty. The practices and attitudes that functioned well in the past may no longer prove effective. Often the acceptable alternatives are unclear. Transitions—from middle school to high school, from high school to college, from college to one's first job, and then to parenthood—often mark periods of vulnerability. But they also provide an opportunity for maximal positive influence.

Indeed, in the original affirmation studies, no added benefit occurred when intervention boosters were given a year later in the eighth grade. Benefits depended not on dosage but timeliness, the proximity of the intervention to a key psychological process at a specific point in time. Many successful affirmation studies have taken place during key transitions—not only to middle school but entry to gateway college courses, not only for minority students entering middle school but for other students contending with threatening transitions, such as economically disadvantaged undergraduates and women entering advanced science tracks (see Cohen & Sherman, 2014; Hanselman, Bruch, Gamoran, & Borman, 2014; Harackiewicz et al., 2014; Miyake et al., 2010; Sherman et al., 2013).

The Devil Is in the Details: The Method Is the Message

A key quality of all the interventions is that they use psychological technologies, precise and often subtle methods, to deliver key messages (Wilson, 2011). For instance, students are not simply told that “they belong.” Rather than being passive recipients of someone else's experience, they actively generate the content of the intervention by putting the key message in their own words (Walton & Cohen, 2011; see also Aronson et al., 2002). Also, because the message “you need help” can be worse than doing nothing at all, the interventions all avert any suggestion that students are seen as victims in need of help (Ross & Nisbett, 2011).

The informed and disciplined use of the techniques “under the hood” of these interventions is essential. Although the spirit of an intervention is often sustained when broadly disseminated, the methodology that drives its success, in contrast, does not fare so well (Yeager & Walton, 2011). The concept of students' self-efficacy, their sense of being able to

achieve important outcomes, offers an example of what can happen (Bandura & Schunk, 1981). Today most educators understand self-efficacy's importance. In fact, it is often part of education school curricula. But many educators are poorly versed in how to cultivate it, for instance, through proximal goals or Socratic questions of the kind expert tutors use (Lepper & Woolverton, 2001). Likewise, in education and policy circles, research on high teacher expectancies is much touted. Yet, the key techniques at the heart of its success are often wrongly recalled and articulated. Contrary to popular belief, teachers in the original study were not led to believe that certain students were “smart” or “would perform well,” assertions of definite ability (see Dweck, 1999). Instead, they were told that the children were “intellectual bloomers,” an assertion implying that current performance inadequately predicts future outcomes. The metaphor is clear. While change is possible, it will require time and care to grow.

Good Intentions Are Not Enough

Examples of well-intended interventions gone wrong are easy to find (Wilson, 2011). Many educators work hard to praise minority students, almost regardless of how mediocre their performance (Harber et al., 2012). Likewise, both educators and parents regularly praise children for their intelligence. Although the desire to be supportive is commendable, these practices exact unintended costs. In overpraising minority students, teachers deprive them of useful feedback and can convey low expectations (Cohen & Steele, 2002). Praising children for their intelligence may make them feel good in the short term, but over the long term it undermines resilience because it sends the message that ability, not effort, determines success (Mueller & Dweck, 1998). At a more structural level is the ill-fated Cambridge-Somerville program that admirably provided at-risk youth with social services. Rather than improving later adult outcomes, it, if anything, worsened life trajectories (McCord, 1978; see Ross & Nisbett, 2011).

The lesson is that when interventions are based primarily on intuition, good intentions, or ideology, they often miss their mark. Nevertheless, some real-world success stories have served as the inspiration for effective interventions (Cohen et al., 1999). In short, while intentions matter, they should not be the basis on which interventions are used. Rather interventions should stand or fall based on the quality of their outcomes.

Conclusion

Many of the social-psychological interventions reviewed here are small both in size and the resources dedicated to them. Yet they can yield large and lasting benefits. The scientific understanding of motivational processes on which they rest explains their effectiveness. Large effects of seemingly

small interventions are possible when they target key processes at the appropriate time.

“To draw out” is the original Latin meaning of “to educate.” This captures the spirit of many social-psychological interventions. Such interventions “draw out” the unrealized potentials in the student and the environment. Returning to an earlier example, although self-control and grit measured in childhood predict lifelong outcomes such as career success, they can also be drawn out by situational changes (Karniol et al., 2011). How do we reconcile the persistence of such qualities with their surprising malleability?

An officer of an urban youth program with whom we worked observed the same paradox in a poor child under his care. According to the officer, this child could find shelter and acquire food for his mother and himself every day. Clearly, the child displayed incredible grit in the demanding situations of daily life for the poor. Yet, that same child, the officer related, when faced with a D on a test would, contrary to what could be expected given his grit outside of school, just give up. What is it about these two situations that could lead to such different responses? One factor is that the immediate costs of getting a D on a class assignment pale in comparison with having neither food nor shelter. Nor does the grade require the same swift mobilization of attention and energy. But paradoxically, over the long term, doing well in school could offer a lasting solution to the problem of feeding and housing oneself and one’s loved ones. Yet, this is difficult to see, much less act on, when one’s daily life is so precarious.

Why is there such inconsistency in a quality so strongly displayed in one setting but not the other? The answer is that qualities like grit and self-control do not come from within the child alone. Whether in the classroom or neighborhood, they live in the interaction between the person and the situation as it plays out across time.

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References

- 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.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology, 41*, 586-598.
- Blackwell, L., Trzesniewski, K., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78*, 246-263.
- Cacioppo, J. T., & Patrick, W. (2008). *Loneliness: Human nature and the need for social connection*. New York, NY: W.W. Norton.
- 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.
- Cohen, G. L., & Sherman, D. K. (2014). The psychology of change: Self-affirmation and social psychological intervention. *Annual Review of Psychology, 65*, 333-371.
- Cohen, G. L., & Steele, C. M. (2002). A barrier of mistrust: How negative stereotypes affect cross-race mentoring. In J. Aronson (Ed.), *Improving academic achievement: Impact of psychological factors on education* (pp. 303-328). San Diego, CA: Academic Press.
- Cohen, G. L., Steele, C. M., & Ross, L. D. (1999). The mentor’s dilemma: Providing critical feedback across the racial divide. *Personality and Social Psychology Bulletin, 25*, 1302-1318.
- Cook, J. E., Purdie-Vaughns, V., Garcia, J., & Cohen, G. L. (2012). Chronic threat and contingent belonging: Protective benefits of values affirmation on identity development. *Journal of Personality and Social Psychology, 102*, 479-496.
- Cordova, D. I., & Lepper, M. R. (1996). Intrinsic motivation and the process of learning: Beneficial effects of contextualization, personalization, and choice. *Journal of Educational Psychology, 88*, 715-730.
- Deci, E. L., & Ryan, R. M. (2012). Self-determination theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 1, pp. 416-437). Thousand Oaks, CA: SAGE.
- Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality and development*. Philadelphia, PA: Psychology Press.
- Garcia, J., & Cohen, G. L. (2012). A social psychological approach to educational intervention. In E. Shafir (Ed.), *Behavioral foundations of policy* (pp. 329-350). Princeton, NJ: Princeton University Press.
- 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.
- Grant, A. M., & Berg, J. M. (2011). Prosocial motivation at work: When, why, and how making a difference makes a difference. In K. Cameron & G. Spreitzer (Eds.), *Oxford handbook of positive organizational scholarship* (pp. 28-44). New York, NY: Oxford University Press.

- Grubb, W. N. (2009). *The money myth: School resources, outcomes, and equity*. New York, NY: Russell Sage Foundation.
- Hanselman, P., Bruch, S. K., Gamoran, A., & Borman, G. D. (2014). Threat in context: School moderation of the impact of social identity threat on racial/ethnic achievement gaps. *Sociology of Education, 87*, 106-124.
- Harackiewicz, J. M., Canning, E. A., Tibbetts, Y., Giffen, C. J., Blair, S. S., Rouse, D. I., & Hyde, J. S. (2014). Closing the social class achievement gap for first-generation students in undergraduate biology. *Journal of Educational Psychology, 106*, 375-389.
- Harackiewicz, J. M., Rozek, C. R., Hulleman, C. S., & Hyde, J. S. (2012). Helping parents to motivate adolescents in mathematics and science: An experimental test of a utility-value intervention. *Psychological Science, 23*, 899-906.
- Harber, K. D., Gorman, J. L., Gengaro, F. P., Butsingh, S., Tsang, W., & Ouellette, R. (2012). Students' race and teachers' social support affect the positive feedback bias in public schools. *Journal of Educational Psychology, 104*, 1149-1161.
- Hulleman, C. S., & Harackiewicz, J. M. (2009). Promoting interest and performance in high school science classes. *Science, 326*, 1410-1412.
- Karniol, R., Galili, L., Shtilerman, D., Naim, R., Stern, K., Manjoch, H., & Silverman, R. (2011). Why superman can wait: Cognitive self-transformation in the delay of gratification paradigm. *Journal of Clinical Child & Adolescent Psychology, 40*, 307-317.
- Lepper, M. R., Sethi, S., Dialdin, D., & Drake, M. (1997). Intrinsic and extrinsic motivation: A developmental perspective. In S. S. Luthar, J. A. Burack, D. Cicchetti, & J. R. Weisz (Eds.), *Developmental psychopathology: Perspectives on adjustment, risk, and disorder* (pp. 23-50). New York, NY: Cambridge University Press.
- Lepper, M. R., & Woolverton, M. (2001). The wisdom of practice: Lessons learned from the study of highly effective tutors. In J. Aronson (Ed.), *Improving academic achievement: Contributions of social psychology* (pp. 133-156). Orlando, FL: Academic Press.
- Lewin, K. (1997). *Resolving social conflict and field theory in social science*. Washington, DC: American Psychological Association. (Original work published 1948)
- McCord, J. (1978). A thirty-year follow-up of treatment effects. *American Psychologist, 33*, 284-289.
- Menec, V. H., Perry, R. P., Struthers, C. W., Schonwetter, D. J., Hechter, F. J., & Eichholz, B. L. (1994). Assisting at-risk college students with attributional retraining and effective teaching. *Journal of Applied Social Psychology, 24*, 675-701.
- Miyake, A., Kost-Smith, L. E., Finkelstein, N. D., Pollock, S. J., Cohen, G. L., & Ito, T. A. (2010). Reducing the gender achievement gap in college science: A classroom study of values affirmation. *Science, 330*, 1234-1237.
- Mueller, C. M., & Dweck, C. S. (1998). Intelligence praise can undermine motivation and performance. *Journal of Personality and Social Psychology, 75*, 33-52.
- Raudenbush, S. W. (1984). Magnitude of teacher expectancy effects on pupil IQ as a function of the credibility of expectancy induction: A synthesis of findings from 18 experiments. *Journal of Educational Psychology, 76*, 85-97.
- Rosenthal, R. (1994). Critiquing pygmalion: A 25-year perspective. *Current Directions in Psychological Science, 4*, 171-172.
- Ross, L. D., & Nisbett, R. E. (2011). *The person and the situation: Perspectives of social psychology*. London, England: Pinter & Martin.
- Sapolsky, R. M. (2004). Organismal stress and telomeric aging: An unexpected connection. *Proceedings of the National Academy of Sciences of the United States of America, 101*, 17323-17324.
- Sherman, D. K., & Cohen, G. L. (2006). The psychology of self-defense: Self-affirmation theory. *Advances in Experimental Social Psychology, 38*, 183-242.
- Sherman, D. K., Hartson, K. A., Binning, K. R., Purdie-Vaughns, V., Garcia, J., Taborsky-Barba, S., . . . Cohen, G. L. (2013). Deflecting the trajectory and changing the narrative: How self-affirmation affects academic performance and motivation under identity threat. *Journal of Personality and Social Psychology, 104*, 591-618.
- Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. *Advances in Experimental Social Psychology, 21*, 261-302.
- 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., & Aronson, J. (2002). Contending with group image: The psychology of stereotype and social identity threat. *Advances in Experimental Social Psychology, 34*, 379-440.
- Stephens, N. M., Hamedani, M. G., & Destin, M. (2014). Closing the social-class achievement gap: A difference-education intervention improves first-generation students' academic performance and all students' college transition. *Psychological Science, 25*, 943-953.
- Vansteenkiste, M., Simons, J., Lens, W., Sheldon, K. M., & Deci, E. L. (2004). Motivating learning, performance, and persistence: The synergistic role of intrinsic goals and autonomy-support. *Journal of Personality and Social Psychology, 87*, 246-260.
- Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes of minority students. *Science, 331*, 1447-1451.
- Wilson, T. D. (2011). *Redirect: The surprising new science of psychological change*. New York, NY: Little, Brown.
- Yeager, D. S., Henderson, M., Paunesku, D., Walton, G. M., D'Mello, S., Spitzer, B. J., & Duckworth, A. L. (2014). Boring but important: A self-transcendent purpose for learning fosters academic self-regulation. *Journal of Personality and Social Psychology, 107*, 559-580.
- Yeager, D. S., Purdie-Vaughns, V., Garcia, J., Apfel, N., Pebley, P., Master, A., . . . Cohen, G. L. (2014). Breaking the cycle of mistrust: Wise interventions to provide critical feedback across the racial divide. *Journal of Experimental Psychology: General, 143*, 804-824.
- Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research, 81*, 267-301.