

THE REMARKABLE REACH OF GROWTH MIND-SETS

Believing in people's ability to change can help thwart teen depression, spur workplace creativity and ease political conflict

By Carol S. Dweck

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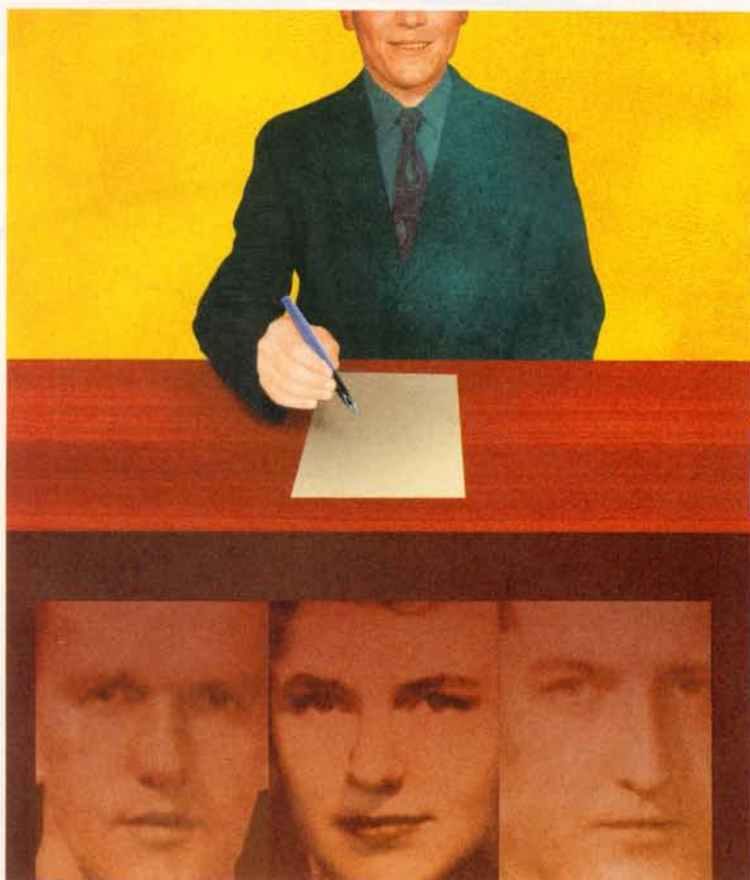


Do you think it is possible to increase your intellectual ability? For decades I have studied the power of this belief to become reality and watched as the concept of maintaining a “growth mind-set” has taken root in education and parenting circles. My colleagues and I have now shown repeatedly that students who believe their intelligence can grow learn more, acquire deeper knowledge and do better—especially in hard subjects and in negotiating difficult school transitions—compared with equally able students who believe their intelligence is a fixed trait.

The reason is simple: students with a growth mind-set are not as worried about looking intelligent, and so they take on more challenges, persist longer and are more resilient in the face of setbacks. In contrast, those with a “fixed mind-set” tend to see challenges as risky and effort and setbacks as signs of limited talent.

Newer research is revealing just how potent this effect can be. Consider one example: In 2014 my Stanford University colleagues Susana Claro and Dave Paunesku and I analyzed census data, examination results and answers about mind-set from 147,000 10th graders in Chile. We found that at every level of family income, the kids who favored a growth mind-set—as measured by a questionnaire we developed—enjoyed substantially higher levels of academic achievement than those who espoused a fixed mind-set. In fact, poorer kids with growth mind-sets often performed as well as far more privileged kids with fixed mind-sets.

We are also discovering more about how fixed mind-sets are passed on—often inadvertently and with the best of intentions—by parents, teachers and peers. Fortunately, those attitudes can be reset toward growth. Through in-person workshops and online modules, we have successfully taught thousands of students—from middle school to university—that when they step out of their comfort zone to learn hard, new things, the neurons in their brain form new or stronger con-



nections, boosting their abilities over time. They learn how to apply this idea to their schoolwork and how it has helped others to succeed.

In recent years a growing body of research has further demonstrated that, well beyond the classroom, a growth mind-set can help thwart depression, decrease aggression, strengthen willpower, spur creativity in the workplace and possibly advance conflict resolution among long-standing enemies. It seems incredible (even to us!), so I would like to tell you more about these exciting new lines of work.

Weathering Adolescent Angst

During the past few years, we have come to appreciate that mind-sets can shape not just academic but also social success at school. In particular, we have focused on teenagers, who often feel harshly judged by their peers and may wonder, “Am I a ‘misfit’? And will I always be this way?” Developmental psychologist David Yeager, now at the University of Texas at Austin, and I theorized that teens who see themselves and others as evolving, growing people might be better positioned to deal with these social stresses, whereas those with more fixed mind-sets might harbor more hostile feelings toward peers who exclude them because those peers have made them feel like permanent “losers.”

FAST FACTS

TURNING BELIEFS INTO REALITY

- 1 A growth mind-set—or the idea that you can grow your abilities by believing that you can—yields big benefits beyond the classroom for teens, adults, businesses, even political adversaries.
- 2 Identifying how teachers, parents, bosses and peers communicate mind-set may increase the number of people who benefit from growth mind-set beliefs.
- 3 Parents and teachers who think they hold a growth mind-set still sometimes convey fixed mind-set messages—especially when they express the view that setbacks are detrimental to a child’s learning.

MANAGERS IN FIXED MIND-SET COMPANIES EMPHASIZE TALENT BUT ULTIMATELY SEE LESS POTENTIAL IN THEIR EMPLOYEES.

To test this idea, we launched a series of studies in 2011. First we measured adolescents' mind-sets about personality—that is, whether they saw personal qualities as fixed or subject to ongoing development. Then we asked them to report on their social conflicts with peers. We found that when adolescents in a fixed mind-set experienced or recalled exclusion or rejection by their peers, they harbored more shame, hatred and fantasies of violent revenge. This pattern was true regardless of the students' socioeconomic backgrounds.

Next Yeager designed a workshop to teach a growth mind-set about personality. More than 200 ninth and 10th graders in a large, low-income high school near San Francisco participated. Over the course of six sessions, they learned that all people have the potential to grow and change—it is not easy but is always possible. Although the staff of the school warned us that it was too late for these teens to change their behavior (“Go help younger kids,” they said), the impact of the workshop was clear.

Compared with control groups, who received no training or different training, the students who attended the six growth mind-set sessions showed reduced aggression in school, as reported by their teachers, who did not know which training the students had received. One month later Yeager put all the kids in the study into a trying situation—specifically, they were temporarily excluded by peers while playing a computer-based ball-tossing game. The growth mind-set group responded less aggressively and more compassionately than control subjects toward the kids who left them out, even when they were given the opportunity to retaliate.

Yeager and his collaborator, psychology Ph.D. student Adriana Miu of Emory University, went on to examine the role these mind-sets play in adolescent depression, known to increase markedly in the first year of high school. In a 2014 study with 599 students, they found that teaching a growth mind-set about personality at the start of ninth grade could reduce the incidence of serious depression by nearly 40 percent, compared with the results for a control group who received different instruction. In fact, Miu and Yeager largely prevented the typical spike in new cases of depression among high school freshmen.

The social effects of mind-set apply to adults as well as teens. Thinking of ourselves as capable of growth can help us weather difficult periods full of judgments and setbacks. And if we can see our adversaries as capable of growth, we can interact more successfully with them. One of our most ambitious projects to date brought together several U.S. psychologists with Eran Halperin of the Interdisciplinary Center Herzliya in Israel to consider the influence of mind-sets on participants caught up in Middle East conflict. We showed that when Jewish Israelis or Palestinians are led to adopt a growth mind-set about social groups—learning that groups can change and do not have an inherent, immutable nature—they come to view one another less negatively and become more willing to entertain serious compromises for the sake of peace.

In research that we have just completed, Halperin, togeth-

er with my Stanford colleagues James Gross and Amit Goldenberg, found that these attitude shifts can endure. Six months after a growth mind-set workshop, many of the people who had learned a growth mind-set perspective remained more optimistic than those in a control group about the possibility of forging a better future.

Enabling Growth on the Job

Another growing realization in my field is that mind-set can characterize and drive large, organized groups just as it influences individuals. Starting in 2010, Mary Murphy, now at Indiana University Bloomington, and I began collaborating with researchers at several other institutions to examine the role of mind-sets at a group of Fortune 1000 companies. We asked hundreds of employees from seven of these businesses to complete a questionnaire: Did their company believe in fixed talent, or did it instead believe in the development of employees' abilities? Notably, there was good consensus among workers on whether their company had a growth or fixed mind-set.

We learned that mind-sets made a big difference in terms of employee attitudes and job satisfaction. The people who worked for growth mind-set businesses said they felt far more empowered by their company and committed to it. They said that their organization valued innovation and creativity—much more so than those who worked for fixed mind-set companies—and that it would support them if they took a reasonable risk that did not work out. In contrast, those in fixed mind-set companies reported that fellow employees engage in more devious practices—keeping secrets, hoarding information—all designed to make them look like winners in the talent hierarchy.

Perhaps most revealing, we found that the managers in

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growth mind-set companies more frequently said that their employees showed the potential to rise and become stars, compared with managers in fixed mind-set companies. I find that ironic because the fixed mind-set companies, for all their emphasis on talent, were, down the road, not seeing as much potential in their workers.

Countering Bias

Just as corporations can embrace distinct mind-sets, so can entire academic fields. In 2015 philosophy professor Sarah-Jane Leslie of Princeton University, psychologist Andrei Cimpian of the University of Illinois at Urbana-Champaign and others uncovered how these mind-sets influence who is thought to excel in certain disciplines. They polled scholars working in 30 different areas and asked them the extent to which success in their field required inherent talent (a fixed mind-set) versus dedication, discipline and hard work (more consistent with a growth mind-set). Two strong correlations emerged: the more a field valued inborn genius, the fewer women and the fewer African-Americans earned Ph.D.s in that subject. This relation held true not just for math and science fields, such as physics and chemistry, but also for certain humanities and social sciences, including economics and philosophy.

Through further questioning, this research team discovered that disciplines that buy into the idea of inherent genius tend to be both less attractive and less welcoming to women. In a wonderful, complementary line of research, Murphy and her colleagues are demonstrating, in an ongoing study involving 264 college students, that when women view their college science in-

structors as believing in fixed, inherent talent, they feel less confident that they belong in science. In other words, they view the professor as believing that only some students have what it takes—and they tend to suspect that as women, they do not fall into that category. Murphy is seeking to identify precisely the kinds of statements and practices through which college science instructors convey these fixed mind-set messages.

These findings are key to understanding the gender, racial and ethnic gaps in important fields. They suggest that we need to pay close attention to the mind-set messages we send students. In doing so, we may begin to find ways to increase the number of women and minorities who enter math, science and economics—disciplines that support an increasing number of vital jobs in our society.

Parenting and Praise

So how are messages about mind-set relayed within families, schools and organizations? Our past research has shown that when adults praise a child's intelligence or talent, it sends a fixed mind-set message, with all its associated liabilities. Children hearing this praise may no longer want to challenge themselves and are discouraged by difficulty, which, in this framework, suggests to them that they might not be so smart after all. But children whose parents and teachers offer what I describe as "process praise"—linking their success to hard work or good strategies—tend to adopt more of a growth mind-set, embrace struggles and thrive in the face of challenge.

Now, you might think that parents and teachers who have growth mind-sets themselves would naturally transmit them

Getting the Message Right for Kids

Many of us declare that we have a growth mind-set, when in fact, we all hold a mixture of fixed and growth mind-sets. For many, a fixed mind-set arises when we contemplate stepping out of our comfort zone or when we face criticism or setbacks. In these cases, does a voice in your head say, "You might not have the ability, and everyone will know it" or "Go for it. Learn. Struggle is part of learning. Ask for input or mentoring"?

Many parents and educators incorrectly believe they are fostering the latter attitude when they exhort children to try hard. Some educators even blame kids who do not comply: "I can't teach this child. He has a fixed mind-set." But simply urging children to try hard is not enough. It does not teach them how the brain grows through learning or how hard work and new strategies lead to deeper learning. And it does not dispel the fixed mind-set belief that hard work is for people who are not that smart to begin with. Never mind that children of all ages experience the generic call to hard work as nagging—something that adults are very good at doing and that kids are very good at ignoring.

Also in the name of a growth mind-set, some adults blithely assure children that they can do anything if only they work hard enough. But if a child lacks the necessary skills, strategies, support or mentoring, such reassurance is hollow and even misguided. On the flip side, some parents and educators have taken to lavishly praising effort, even when a child has not in fact worked hard or effectively. This tactic, too, sends a discouraging message: "You are not capable of anything better."

To convey a true growth mind-set, adults must help kids understand what they need to do to develop their abilities and to guide them in that process. We see a "process focus" as appreciating not only children's genuine efforts but also their use of good strategies and their appropriate seeking of input from others as they strive to meet a high standard. We also see a process focus as tying these strategies directly to the child's learning and progress. What about when a child has tried hard but fallen short? The adult can appreciate the effort but point to the next step: "Let's talk about what strategies you've tried and what you can try next." —C.S.D.



to the children in their care. In that case, we could just teach a growth mind-set to the adults and sit back. But as we and other researchers are now discovering, overt words and deeds speak louder than covert mind-sets—and the two do not always match. Let us look more closely.

In 2013, together with colleagues at Stanford and the University of Chicago, I examined how mothers praise their babies, analyzing videotaped interactions when the tots were one, two and three years old. Five years later, when the children were in second grade, we assessed their mind-set and appetite for challenge. At that point, we also asked the mothers about their mind-set and whether they believed that intelligence and other personal qualities were fixed or traits that could be developed.

We discovered that the mothers' earlier pattern of praise predicted their children's mind-set and desire for challenge in second grade, but the mothers' own reported mind-set did not. Mothers who said they had a growth mind-set but did not praise the process their children engaged in did not tend to raise kids who welcomed challenge or believed in growth. But consistent with our past research, the mothers who gave their children more process praise—focused on actions, persistence or strategies—relative to other forms of praise raised kids with stronger growth mind-sets and more interest in tackling challenges. In a follow-up study, we have just found that this latter group of children continued to progress and showed higher math and verbal achievement two years later, in fourth grade.

Thus, many mothers who believe in a growth mind-set may

not know how to put it into practice [see box on opposite page]. Brand-new research, by Stanford psychology Ph.D. student Kyla Haimovitz and me, continues this story. We are looking at parents' views of failure and their reactions to their children's setbacks. In a series of studies, we have found that parents who believe setbacks are harmful (as opposed to helpful) to a child's learning tend to foster a fixed mind-set in their offspring. When they react to their kids' setbacks with anxiety or concern, the children are led to believe that setbacks reflect badly on their (permanent) ability. Here, too, many parents espoused a growth mind-set, but if they did not translate that into a positive reaction to errors, they passed on a fixed mind-set to their kids.

More new research, this time looking at middle school math teachers, tells the same tale. In her fascinating dissertation research at Stanford, Kathy Liu Sun found that many of the math teachers she surveyed said they embraced a growth mind-set and even used the words "growth mind-set" in their classrooms. If they did not, however, back that up with growth-focused teaching methods—for example, emphasizing an understanding of the underlying concepts, giving feedback to deepen that understanding, and offering students a chance to revise and re-submit their work to demonstrate their enhanced understanding—their students tended to cling to a fixed mind-set in math. The students did not benefit from the experience of growing their mathematical abilities.

Taken together, these results have inspired us to look even more deeply into the practices—the words and deeds—that convey to children and adults that their talents can be developed. Through research, we are seeking to identify more of these practices and to spell them out clearly so that those who hold a growth mind-set and wish to foster it in others can pass it on effectively. But as we scientists are so fond of saying, more research is needed. Stay tuned. **M**

MORE TO EXPLORE

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