mindset
THE NEW PSYCHOLOGY OF SUCCESS

HOW WE CAN LEARN TO FULFILL OUR POTENTIAL

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Carol S. Dweck, Ph.D.

— Read the enclosed pages.
— Take notes about ideas you want to remember.
— Highlight quotes that “speak to you.”
— We’ll discuss this next time.

INSIDE THE MINDSETS

When I was a young woman, I wanted a prince-like mate. Very handsome, very successful. A big cheese. I wanted a glamorous career, but nothing too hard or risky. And I wanted it all to come to me as validation of who I was.

It would be many years before I was satisfied. I got a great guy, but he was a work in progress. I have a great career, but boy, is it a constant challenge. Nothing was easy. So why am I satisfied? I changed my mindset.

I changed it because of my work. One day my doctoral student, Mary Bandura, and I were trying to understand why some students were so caught up in proving their ability, while others could just let go and learn. Suddenly we realized that there were two meanings to ability; not one: a fixed ability that needs to be proven, and a changeable ability that can be developed through learning.

That’s how the mindsets were born. I knew instantly which one I had. I realized why I’d always been so concerned about mistakes and failures. And I recognized for the first time that I had a choice.

When you enter a mindset, you enter a new world. In one world—the world of fixed traits—success is about proving you’re smart or talented. Validating yourself. In the other—the world of changing qualities—it’s about stretching yourself to learn something new. Developing yourself.

In one world, failure is about having a setback. Getting a bad grade.
Losing a tournament. Getting fired. Getting rejected. It means you're not smart or talented. In the other world, failure is about not growing. Not reaching for the things you value. It means you're not fulfilling your potential.

In one world, effort is a bad thing. It, like failure, means you're not smart or talented. If you were, you wouldn't need effort. In the other world, effort is what makes you smart or talented.

You have a choice. Mindsets are just beliefs. They're powerful beliefs, but they're just something in your mind, and you can change your mind. As you read, think about where you'd like to go and which mindset will take you there.

**IS SUCCESS ABOUT LEARNING—OR PROVING YOU'RE SMART?**

Benjamin Barber, an eminent sociologist, once said, "I don't divide the world into the weak and the strong, or the successes and the failures... I divide the world into the learners and nonlearners."

What on earth would make someone a nonlearner? Everyone is born with an intense drive to learn. Infants stretch their skills daily. Not just ordinary skills, but the most difficult tasks of a lifetime, like learning to walk and talk. They never decide it's too hard or not worth the effort. Babies don't worry about making mistakes or humiliating themselves. They walk, they fall, they get up. They just barge forward.

What could put an end to this exuberant learning? The fixed mindset. As soon as children become able to evaluate themselves, some of them become afraid of challenges. They become afraid of not being smart. I have studied thousands of people from preschoolers on, and it's breathtaking how many reject an opportunity to learn.

We offered four-year-olds a choice: They could redo an easy jigsaw puzzle or they could try a harder one. Even at this tender age, children with the fixed mindset—the ones who believed in fixed traits—stuck with the safe one. Kids who are born smart "don't do mistakes," they told us.

Children with the growth mindset—the ones who believed you could get smarter—thought it was a strange choice. *Why are you asking me this, lady? Why would anyone want to keep doing the same puzzle over and over?* They chose one hard one after another. "I'm dying to figure them out!" exclaimed one little girl.

So children with the fixed mindset want to make sure they succeed. Smart people should always succeed. But for children with the growth mindset, success is about stretching themselves. It's about becoming smarter.

One seventh-grade girl summed it up. "I think intelligence is something you have to work for... it isn't just given to you... Most kids, if they're not sure of an answer, will not raise their hand to answer the question. But what I usually do is raise my hand, because if I'm wrong, then my mistake will be corrected. Or I will raise my hand and say, 'How would this be solved?' or 'I don't get this. Can you help me?' Just by doing that I'm increasing my intelligence."

**Beyond Puzzles**

It's one thing to pass up a puzzle. It's another to pass up an opportunity that's important to your future. To see if this would happen, we took advantage of an unusual situation. At the University of Hong Kong, everything is in English. Classes are in English, textbooks are in English, and exams are in English. But some students who enter the university are not fluent in English, so it would make sense for them to do something about it in a hurry.

As students arrived to register for their freshman year, we knew which ones were not skilled in English. And we asked them a key question: If the faculty offered a course for students who need to improve their English skills, would you take it?

We also measured their mindset. We did this by asking them how much they agreed with statements like this: "You have a certain amount of intelligence, and you can't really do much to change it." People who agree with this kind of statement have a fixed mindset.

Those who have a growth mindset agree that: "You can always substantially change how intelligent you are."

Later, we looked at who said yes to the English course. Students with
the growth mindset said an emphatic yes. But those with the fixed mindset were not very interested.

Believing that success is about learning, students with the growth mindset seized the chance. But those with the fixed mindset didn’t want to expose their deficiencies. Instead, to feel smart in the short run, they were willing to put their college careers at risk.

This is how the fixed mindset makes people into nonlearners.

Brain Waves Tell the Story

You can even see the difference in people’s brain waves. People with both mindsets came into our brain-wave lab at Columbia. As they answered hard questions and got feedback, we were curious about whether their brain waves would show them to be interested and attentive.

People with a fixed mindset were only interested when the feedback reflected on their ability. Their brain waves showed them paying close attention when they were told whether their answers were right or wrong.

But when they were presented with information that could help them learn, there was no sign of interest. Even when they’d gotten an answer wrong, they were not interested in learning what the right answer was.

Only people with a growth mindset paid close attention to information that could stretch their knowledge. Only for them was learning a priority.

What’s Your Priority?

If you had to choose, which would it be? Loads of success and validation or lots of challenge?

It’s not just on intellectual tasks that people have to make these choices. People also have to decide what kinds of relationships they want: ones that bolster their egos or ones that challenge them to grow?

Who is your ideal mate? We put this question to young adults, and here’s what they told us.

People with the fixed mindset said the ideal mate would:

Put them on a pedestal.

Make them feel perfect.

Worship them.

In other words, the perfect mate would enshrine their fixed qualities. My husband says that he used to feel this way, that he wanted to be the god of a one-person (his partner’s) religion. Fortunately, he chuckled this idea before he met me.

People with the growth mindset hoped for a different kind of partner. They said their ideal mate was someone who would:

See their faults and help them to work on them.

Challenge them to become a better person.

Encourage them to learn new things.

Certainly, they didn’t want people who would pick on them or undermine their self-esteem, but they did want people who would foster their development. They didn’t assume they were fully evolved, flawless beings who had nothing more to learn.

Are you already thinking, Uh-oh, what if two people with different mindsets get together? A growth-mindset woman tells about her marriage to a fixed-mindset man:

I had barely gotten all the rice out of my hair when I began to realize I made a big mistake. Every time I said something like “Why don’t we try to go out a little more?” or “I’d like it if you consulted me before making decisions,” he was devastated. Then instead of talking about the issue I raised, I’d have to spend literally an hour repairing the damage and making him feel good again. Plus he would then run to the phone to call his mother, who always showered him with the constant adoration he seemed to need. We were both young and new at marriage. I just wanted to communicate.

So the husband’s idea of a successful relationship—total, uncritical acceptance—was not the wife’s. And the wife’s idea of a successful relationship—confronting problems—was not the husband’s. One person’s growth was the other person’s nightmare.
how you react to praise and to correction. Those more responsive to the
correction are deemed worthy."

In other words, she separates the ones who get their thrill from
what's easy—what they've already mastered—from those who get their
thrill from what's hard.

I'll never forget the first time I heard myself say, "This is hard. This is
fun." That's the moment I knew I was changing mindsets.

When Do You Feel Smart:
When You're Flawless or When You're Learning?

The plot is about to thicken, for in the fixed mindset it's not enough just
to succeed. It's not enough just to look smart and talented. You have to
be pretty much flawless. And you have to be flawless right away.

We asked people, ranging from grade schoolers to young adults,
"When do you feel smart?" The differences were striking. People with
the fixed mindset said:

"It's when I don't make any mistakes."

"When I finish something fast and it's perfect."

"When something is easy for me, but other people can't do it."

It's about being perfect right now. But people with the growth mind-
set said:

"When it's really hard, and I try really hard, and I can do something
I couldn't do before."

Or "[When] I work on something a long time and I start to figure it
out."

For them it's not about immediate perfection. It's about learning
something over time: confronting a challenge and making progress.

If You Have Ability,
Why Should You Need Learning?

Actually, people with the fixed mindset expect ability to show up on its
own, before any learning takes place. After all, if you have it you have it,
and if you don't you don't. I see this all the time.

Out of all the applicants from all over the world, my department at
Columbia admitted six new graduate students a year. They all had amaz-
ing test scores, nearly perfect grades, and rave recommendations from
eminent scholars. Moreover, they'd been courted by the top grad schools.

It took one day for some of them to feel like complete imposters. Yes-
terday they were hotshots; today they're failures. Here's what happens.
They look at the faculty with our long list of publications. "Oh my God,
I can't do that." They look at the advanced students who are submitting
articles for publication and writing grant proposals. "Oh my God, I can't
do that." They know how to take tests and get As but they don't know
how to do this—yet. They forget the yet.

Isn't that what school is for, to teach? They're there to learn how to
do these things, not because they already know everything.

I wonder if this is what happened to Janet Cooke and Stephen Glass.
They were both young reporters who skyrocketed to the top—on fabri-
cated articles. Janet Cooke won a Pulitzer Prize for her Washington Post
articles about an eight-year-old boy who was a drug addict. The boy did
not exist, and she was later stripped of her prize. Stephen Glass was the
whiz kid of The New Republic, who seemed to have stories and sources
reporters only dream of. The sources did not exist and the stories were
not true.

Did Janet Cooke and Stephen Glass need to be perfect right away?
Did they feel that admitting ignorance would discredit them with their
colleagues? Did they feel they should already be like the big-time re-
porters before they did the hard work of learning how? "We were stars—
precocious stars," wrote Stephen Glass, "and that was what mattered."
The public understands them as cheats, and cheat they did. But I under-
stand them as talented young people—desperate young people—who
sucumbed to the pressures of the fixed mindset.

There was a saying in the 1960s that went: "Becoming is better than
being." The fixed mindset does not allow people the luxury of becoming.
They have to already be.
As a contrast, let's look at Michael Jordan—growth-minded athlete par excellence—whose greatness is regularly proclaimed by the world: "Superman," "God in person," "Jesus in tennis shoes." If anyone has reason to think of himself as special, it's he. But here's what he said when his return to basketball caused a huge commotion: "I was shocked with the level of intensity my coming back to the game created. . . . People were praising me like I was a religious cult or something. That was very embarrassing. I'm a human being like everyone else."

Jordan knew how hard he had worked to develop his abilities. He was a person who had struggled and grown, not a person who was inherently better than others.

Tom Wolfe, in The Right Stuff, describes the elite military pilots who eagerly embrace the fixed mindset. Having passed one rigorous test after another, they think of themselves as special, as people who were born smarter and braver than other people. But Chuck Yeager, the hero of The Right Stuff, begged to differ. "There is no such thing as a natural-born pilot. Whatever my aptitude or talents, becoming a proficient pilot was hard work, really a lifetime's learning experience. . . . The best pilots fly more than the others; that's why they're the best." Like Michael Jordan, he was a human being. He just stretched himself farther than most.

In summary, people who believe in fixed traits feel an urgency to succeed, and when they do, they may feel more than pride. They may feel a sense of superiority, since success means that their fixed traits are better than other people's.

However, lurking behind that self-esteem of the fixed mindset is a simple question: If you're somebody when you're successful, what are you when you're unsuccessful?

Defining Moments

Even in the growth mindset, failure can be a painful experience. But it doesn't define you. It's a problem to be faced, dealt with, and learned from.

Jim Marshall, former defensive player for the Minnesota Vikings, relates what could easily have made him into a failure. In a game against the San Francisco 49ers, Marshall spotted the football on the ground. He scooped it up and ran for a touchdown as the crowd cheered. But he ran the wrong way. He scored for the wrong team and on national television.

It was the most devastating moment of his life. The shame was overpowering. But during halftime, he thought, "If you make a mistake, you
The book was a testament to Seabiscuit’s triumph and her own, equally.

Seen through the lens of the growth mindset, these are stories about the transformative power of effort—the power of effort to change your ability and to change you as a person. But filtered through the fixed mindset, it’s a great story about three men and a horse, all with deficiencies, who had to try very hard.

High Effort: The Big Risk

From the point of view of the fixed mindset, effort is only for people with deficiencies. And when people already know they’re deficient, they have nothing to lose by trying. But if your claim to fame is not having any deficiencies—if you’re considered a genius, a talent, or a natural—then you have a lot to lose. Effort can reduce you.

Nadja Salerno-Sonnenberg made her violin debut at the age of ten with the Philadelphia Orchestra. Yet when she arrived at Juilliard to study with Dorothy DeLay, the great violin teacher, she had a repertoire of awful habits. Her fingerings and bowings were awkward and she held her violin in the wrong position, but she refused to change. After several years, she saw the other students catching up and even surpassing her, and by her late teens she had a crisis of confidence. “I was used to success, to the prodigy label in newspapers, and now I felt like a failure.”

This prodigy was afraid of trying. “Everything I was going through boiled down to fear. Fear of trying and failing... If you go to an audition and don’t really try, if you’re not really prepared, if you didn’t work as hard as you could have and you don’t win, you have an excuse... Nothing is harder than saying, ‘I gave it my all and it wasn’t good enough.’ ”

The idea of trying and still failing—of leaving yourself without excuses—is the worst fear within the fixed mindset, and it haunted and paralyzed her. She had even stopped bringing her violin to her lesson.

Then, one day, after years of patience and understanding, DeLay told her, “Listen, if you don’t bring your violin next week, I’m throwing you out of my class.” Salerno-Sonnenberg thought she was joking, but DeLay rose from the couch and calmly informed her, “I’m not kidding. If you are going to waste your talent, I don’t want to be a part of it. This has gone on long enough.”

Why is effort so terrifying?

There are two reasons. One is that in the fixed mindset, great geniuses are not supposed to need it. So just needing it casts a shadow on your ability. The second is that, as Nadja suggests, it robs you of all your excuses. Without effort, you can always say, “I could have been [fill in the blank].” But once you try, you can’t say that anymore. Someone once said to me, “I could have been Yo-Yo Ma.” If she had really tried for it, she wouldn’t have been able to say that.

Salerno-Sonnenberg was terrified of losing DeLay. She finally decided that trying and failing—an honest failure—was better than the course she had been on, and so she began training with DeLay for an upcoming competition. For the first time she went all out, and, by the way, won. Now she says, “This is something I know for a fact: You have to work hardest for the things you love most. And when it’s music you love, you’re in for the fight of your life.”

Fear of effort can happen in relationships, too, as it did with Amanda, a dynamic and attractive young woman.

I had a lot of crazy boyfriends. A lot. They ranged from unreliable to inconsiderate. “How about a nice guy for once?” my best friend Carla always said. It was like, “You deserve better.”

So then Carla fixed me up with Rob, a guy from her office. He was great, and not just on day one. I loved it. It was like, “Oh, my God, a guy who actually shows up on time.” Then it became serious and I freaked. I mean, this guy really liked me, but I couldn’t stop thinking about how, if he really knew me, he might get turned off. I mean, what if I really, really tried and it didn’t work? I guess I couldn’t take that risk.
or more chemists, mathematicians, physicists, engineers, and glassblowers.

Edison was no naïve tinkerer or unworldly egghead. The "Wizard of Menlo Park" was a savvy entrepreneur, fully aware of the commercial potential of his inventions. He also knew how to cozy up to the press—sometimes beating others out as the inventor of something because he knew how to publicize himself.

Yes, he was a genius. But he was not always one. His biographer, Paul Israel, sifting through all the available information, thinks he was more or less a regular boy of his time and place. Young Tom was taken with experiments and mechanical things (perhaps more avidly than most), but machines and technology were part of the ordinary midwestern boy's experience.

What eventually set him apart was his mindset and drive. He never stopped being the curious, tinkering boy looking for new challenges. Long after other young men had taken up their roles in society, he rode the rails from city to city learning everything he could about telegraphy, and working his way up the ladder of telegraphers through nonstop self-education and invention. And later, much to the disappointment of his wives, his consuming love remained self-improvement and invention, but only in his field.

There are many myths about ability and achievement, especially about the lone, brilliant person suddenly producing amazing things.

Yet Darwin's masterwork, *The Origin of Species*, took years of teamwork in the field, hundreds of discussions with colleagues and mentors, several preliminary drafts, and half a lifetime of dedication before it reached fruition.

Mozart labored for more than ten years until he produced any work that we admire today. Before then, his compositions were not that original or interesting. Actually, they were often patched-together chunks taken from other composers.

This chapter is about the real ingredients in achievement. It's about why some people achieve less than expected and why some people achieve more.

**MINDSET AND SCHOOL ACHIEVEMENT**

Let's step down from the celestial realm of Mozart and Darwin and come back to earth to see how mindsets create achievement in real life. It's funny, but seeing one student blossom under the growth mindset has a greater impact on me than all the stories about Mozarts and Darwins. Maybe because it's more about you and me—about what's happened to us and why we are where we are now. And about children and their potential.

Back on earth, we measured students' mindsets as they made the transition to junior high school: Did they believe their intelligence was a fixed trait or something they could develop? Then we followed them for the next two years.

The transition to junior high is a time of great challenge for many students. The work gets much harder, the grading policies toughen up, the teaching becomes less personalized. And all this happens while students are coping with their new adolescent bodies and roles. Grades suffer, but not everyone's grades suffer equally.

No. In our study, only the students with the fixed mindset showed the decline. They showed an immediate drop-off in grades, and slowly but surely did worse and worse over the two years. The students with the growth mindset showed an increase in their grades over the two years.

When the two groups had entered junior high, their past records were indistinguishable. In the more benign environment of grade school, they'd earned the same grades and achievement test scores. Only when they hit the challenge of junior high did they begin to pull apart.

Here's how students with the fixed mindset explained their poor grades. Many maligned their abilities: "I am the stupidest" or "I suck in math." And many covered these feelings by blaming someone else: "[The math teacher] is a fat male slut . . . and [the English teacher] is a slob with a pink ass." "Because the teacher is on crack." These interesting analyses of the problem hardly provide a road map to future success.

With the threat of failure looming, students with the growth mind-
set instead mobilized their resources for learning. They told us that they, too, sometimes felt overwhelmed, but their response was to dig in and do what it takes. They were like George Danzig. Who?

George Danzig was a graduate student in math at Berkeley. One day, as usual, he rushed in late to his math class and quickly copied the two homework problems from the blackboard. When he later went to do them, he found them very difficult, and it took him several days of hard work to crack them open and solve them. They turned out not to be homework problems at all. They were two famous math problems that had never been solved.

The Low-Effort Syndrome

Our students with the fixed mindset who were facing the hard transition saw it as a threat. It threatened to unmask their flaws and turn them from winners into losers. In fact, in the fixed mindset, adolescence is one big test. Am I smart or dumb? Am I good-looking or ugly? Am I cool or nerdy? Am I a winner or a loser? And in the fixed mindset, a loser is forever.

It's no wonder that many adolescents mobilize their resources, not for learning, but to protect their egos. And one of the main ways they do this (aside from providing vivid portraits of their teachers) is by not trying. This is when some of the brightest students, just like Nadja Salerno-Sonnenberg, simply stop working. In fact, students with the fixed mindset tell us that their main goal in school—aside from looking smart—is to exert as little effort as possible. They heartily agree with statements like this:

"In school my main goal is to do things as easily as possible so I don't have to work very hard."

This low-effort syndrome is often seen as a way that adolescents assert their independence from adults, but it is also a way that students with the fixed mindset protect themselves. They view the adults as saying, "Now we will measure you and see what you've got." And they are answering, "No you won't."

John Holt, the great educator, says that these are the games all human beings play when others are sitting in judgment of them. "The worst student we had, the worst I have ever encountered, was in his life outside the classroom as mature, intelligent, and interesting a person as anyone at the school. What went wrong? . . . Somewhere along the line, his intelligence became disconnected from his schooling."

For students with the growth mindset, it doesn't make sense to stop trying. For them, adolescence is a time of opportunity: a time to learn new subjects, a time to find out what they like and what they want to become in the future.

Later, I'll describe the project in which we taught junior high students the growth mindset. What I want to tell you now is how teaching them this mindset unleashed their effort. One day, we were introducing the growth mindset to a new group of students. All at once Jimmy—the most hard-core turned-off low-effort kid in the group—looked up with tears in his eyes and said, "You mean I don't have to be dumb?" From that day on, he worked. He started staying up late to do his homework, which he never used to bother with at all. He started handing in assignments early so he could get feedback and revise them. He now believed that working hard was not something that made you vulnerable, but something that made you smarter.

Finding Your Brain

A close friend of mine recently handed me something he'd written, a poem-story that reminded me of Jimmy and his unleashed effort. My friend's second-grade teacher, Mrs. Beer, had had each student draw and cut out a paper horse. She then lined up all the horses above the blackboard and delivered her growth-mindset message: "Your horse is only as fast as your brain. Every time you learn something, your horse will move ahead."

My friend wasn't so sure about the "brain" thing. His father had always told him, "You have too much mouth and too little brains for your own good." Plus, his horse seemed to just sit at the starting gate while "everyone else's brain joined the learning chase," especially the brains of Hank and Billy, the class geniuses, whose horses jumped way ahead of everyone else's. But my friend kept at it. To improve his skills, he kept
provided with the appropriate prior and current conditions of learning." He's not counting the 2 to 3 percent of children who have severe impairments, and he's not counting the top 1 to 2 percent of children at the other extreme that include children like Michael. He is counting everybody else.

**Ability Levels and Tracking**

But aren't students sorted into different ability levels for a reason? Haven't their test scores and past achievement shown what their ability is? Remember, test scores and measures of achievement tell you where a student is, but they don't tell you where a student could end up.

Falko Rheinberg, a researcher in Germany, studied schoolteachers with different mindsets. Some of the teachers had the fixed mindset. They believed that students entering their class with different achievement levels were deeply and permanently different:

"According to my experience students' achievement mostly remains constant in the course of a year."

"If I know students' intelligence I can predict their school career quite well."

"As a teacher I have no influence on students' intellectual ability."

Like my sixth-grade teacher, Mrs. Wilson, these teachers preached and practiced the fixed mindset. In their classrooms, the students who started the year in the high-ability group ended the year there, and those who started the year in the low-ability group ended the year there.

But some teachers preached and practiced a growth mindset. They focused on the idea that all children could develop their skills, and in their classrooms a weird thing happened. It didn't matter whether students started the year in the high- or the low-ability group. Both groups ended the year way up high. It's a powerful experience to see these findings. The group differences had simply disappeared under the guidance of teachers who taught for improvement, for these teachers had found a way to reach their "low-ability" students.

How teachers put a growth mindset into practice is the topic of a later chapter, but here's a preview of how Marva Collins, the renowned teacher, did it. On the first day of class, she approached Freddie, a left-back second grader, who wanted no part of school. "Come on, peach," she said to him, cupping his face in her hands, "we have work to do. You can't just sit in a seat and grow smart... I promise, you are going to do, and you are going to produce. I am not going to let you fail."

**Summary**

The fixed mindset limits achievement. It fills people's minds with interfering thoughts, it makes effort disagreeable, and it leads to inferior learning strategies. What's more, it makes other people into judges instead of allies. Whether we're talking about Darwin or college students, important achievements require a clear focus, all-out effort, and a bottomless trunk full of strategies. Plus allies in learning. This is what the growth mindset gives people, and that's why it helps their abilities grow and bear fruit.

**IS ARTISTIC ABILITY A GIFT?**

Despite the widespread belief that intelligence is born, not made, when we really think about it, it's not so hard to imagine that people can develop their intellectual abilities. The intellect is so multifaceted. You can develop verbal skills or mathematical-scientific skills or logical thinking skills, and so on. But when it comes to artistic ability, it seems more like a God-given gift. For example, people seem to naturally draw well or poorly.

Even I believed this. While some of my friends seemed to draw beautifully with no effort and no training, my drawing ability was arrested in early grade school. Try as I might, my attempts were primitive and disappointing. I was artistic in other ways. I can design, I'm great with colors, I have a subtle sense of composition. Plus I have really good eye-hand coordination. Why couldn't I draw? I must not have the gift.

I have to admit that it didn't bother me all that much. After all, when do you really have to draw? I found out one evening as the dinner guest of a fascinating man. He was an older man, a psychiatrist, who had es-
one process. Some people succeed at the course of their lives, whereas others do not. They do them together. But as we can see, it is possible for people with the fixed mindset to do it.

Here's what that means: little or no training, it doesn't matter, but it even better with training. It tells you all you need to know.

It would have been a real shame if that had happened. Experts agree and when you look at his work, you can see why.

he became one of the greatest American painters of the twentieth century and that he revolutionized modern art. How did he go from point A to point B?

Twyla Tharp, the world-famous choreographer and dancer, wrote a book called *The Creative Habit*. As you can guess from the title, she argues that creativity is not a magical act of inspiration. It's the result of hard work and dedication. *Even for Mozart*. Remember the movie *Amadeus*. Remember how it showed Mozart easily churning out one masterpiece after another while Salieri, his rival, is dying of envy? Well, Tharp worked on that movie and she says: Hogwash! Nonsense! "There are no 'natural' geniuses."

Dedication is how Jackson Pollock got from point A to point B. Pollock was wildly in love with the idea of being an artist. He thought about art all the time, and he did it all the time! Because he was so gung-ho, he got others to take him seriously and mentor him until he mastered all there was to master and began to produce startlingly original works. His "poured" paintings, each completely unique, allowed him to draw from his unconscious mind and convey a huge range of feeling. Several years ago, I was privileged to see a show of these paintings at the Museum of Modern Art in New York. I was stunned by the power and beauty of each work.

Can anyone do anything? I don't really know. However, I think we can now agree that people can do a lot more than first meets the eye.

THE DANGER OF PRAISE AND POSITIVE LABELS

If people have such potential to achieve, how can they gain faith in their potential? How can we give them the confidence they need to go for it? How about praising their ability in order to convey that they have what it takes? In fact, more than 80 percent of parents told us it was necessary to praise children's ability so as to foster their confidence and achievement. You know, it makes a lot of sense.

But then we began to worry. We thought about how people with the fixed mindset already focus too much on their ability: "Is it high enough?" "Will it look good?" Wouldn't praising people's ability focus them on it even more? Wouldn't it be telling them that that's what we value and, even worse, that we can read their deep, underlying ability from their performance? Isn't that teaching them the fixed mindset?

Adam Guettel has been called the crown prince and savior of musical theater. He is the grandson of Richard Rodgers, the man who wrote the music to such classics as *Oklahoma!* and *Carousel*. Guettel's mother gushes about her son's genius. So does everyone else. "The talent is there and it's major," raved a review in *The New York Times*. The question is whether this kind of praise encourages people.

What's great about research is that you can ask these kinds of questions and then go get the answers. So we conducted studies with hundreds of students, mostly early adolescents. We first gave each student a set of ten fairly difficult problems from a nonverbal IQ test. They mostly did pretty well on these, and when they finished we praised them.

We praised some of the students for their ability. They were told: "Wow, you got [say] eight right. That's a really good score. You must be smart at this." They were in the Adam Guettel you're-so-talented position.
We praised other students for their effort: "Wow, you got [say] eight right. That's a really good score. You must have worked really hard." They were not made to feel that they had some special gift; they were praised for doing what it takes to succeed.

Both groups were exactly equal to begin with. But right after the praise, they began to differ. As we feared, the ability praise pushed students right into the fixed mindset, and they showed all the signs of it, too: When we gave them a choice, they rejected a challenging new task that they could learn from. They didn't want to do anything that could expose their flaws and call into question their talent.

When Guettel was thirteen, he was all set to star in a Metropolitan Opera broadcast and TV movie of Amahl and the Night Visitors. He bowed out, saying that his voice had broken. "I kind of faked that my voice was changing... I didn't want to handle the pressure."

In contrast, when students were praised for effort, 90 percent of them wanted the challenging new task that they could learn from.

Then we gave students some hard new problems, which they didn't do so well on. The ability kids now thought they were not smart after all. If success had meant they were intelligent, then less-than-success meant they were deficient.

Guettel echoes this. "In my family, to be good is to fail. To be very good is to fail... The only thing not a failure is to be great."

The effort kids simply thought the difficulty meant "Apply more effort." They didn't see it as a failure, and they didn't think it reflected on their intellect.

What about the students' enjoyment of the problems? After the success, everyone loved the problems, but after the difficult problems, the ability students said it wasn't fun anymore. It can't be fun when your claim to fame, your special talent, is in jeopardy.

Here's Adam Guettel: "I wish I could just have fun and relax and not have the responsibility of that potential to be some kind of great man." As with the kids in our study, the burden of talent was killing his enjoyment.

The ability Praised students still loved the problems, and many of them said that the hard problems were the most fun.

We then looked at the students' performance. After the experience with difficulty, the performance of the ability-praised students plummeted, even when we gave them some more of the easier problems. Losing faith in their ability, they were doing worse than when they started. The effort kids showed better and better performance. They had used the hard problems to sharpen their skills, so that when they returned to the easier ones, they were way ahead.

Since this was a kind of IQ test, you might say that praising ability lowered the students' IQs. And that praising their effort raised them.

Guettel was not thriving. He was riddled with obsessive-compulsive tics and bitten, bleeding fingers. "Spend a minute with him—it takes only one—and a picture of the terror behind the tics starts to emerge," says an interviewer. Guettel has also fought serious, recurrent drug problems. Rather than empowering him, the "gift" has filled him with fear and doubt. Rather than fulfilling his talent, this brilliant composer has spent most of his life running from it.

One thing is hopeful—his recognition that he has his own life course to follow that is not dictated by other people and their view of his talent. One night he had a dream about his grandfather. "I was walking him to an elevator. I asked him if I was any good. He said, rather kindly, 'You have your own voice.'"

Is that voice finally emerging? For the score of The Light in the Piazza, an intensely romantic musical, Guettel won the 2005 Tony Award. Will he take it as praise for talent or praise for effort? I hope it's the latter.

There was one more finding in our study that was striking and depressing at the same time. We said to each student: "You know, we're going to go to other schools, and I bet the kids in those schools would like to know about the problems." So we gave students a page to write out their thoughts, but we also left a space for them to write the scores they had received on the problems.

Would you believe that almost 40 percent of the ability-praised students lied about their scores? And always in one direction. In the fixed mindset, imperfections are shameful—especially if you're talented—so they lied them away.

What's so alarming is that we took ordinary children and made them into liars, simply by telling them they were smart.
Right after I wrote these paragraphs, I met with a young man who
tutors students for their College Board exams. He had come to consult
with me about one of his students. This student takes practice tests and
then lies to him about her score. He is supposed to tutor her on what she
doesn’t know, but she can’t tell him the truth about what she doesn’t
know! And she is paying money for this.

So telling children they’re smart, in the end, made them feel dumber
and act dumber, but claim they were smarter. I don’t think this is what
we’re aiming for when we put positive labels—"gifted," "talented," "brilliant"—on people. We don’t mean to rob them of their zest for chal-
lenge and their recipes for success. But that’s the danger.

Here is a letter from a man who read some of my work:

Dear Dr. Dweck,

It was painful to read your chapter... as I recognized myself
therein.

As a child I was a member of The Gifted Child Society and
continually praised for my intelligence. Now, after a lifetime of
not living up to my potential (I’m 49), I’m learning to apply
myself to a task. And also to see failure not as a sign of stupidity
but as lack of experience and skill. Your chapter helped see
myself in a new light.

Seth Abrams

This is the danger of positive labels. There are alternatives, and I will
return to them later in the chapter on parents, teachers, and coaches.

NEGATIVE LABELS AND HOW THEY WORK

I was once a math whiz. In high school, I got a 99 in algebra, a 99 in
geometry, and a 99 in trigonometry, and I was on the math team. I
scored up there with the boys on the air force test of visual-spatial abil-

ity, which is why I got recruiting brochures from the air force for many
years to come.

Then I got a Mr. Hellman, a teacher who didn’t believe girls could do
math. My grades declined, and I never took math again.

I actually agreed with Mr. Hellman, but I didn’t think it applied to
me. Other girls couldn’t do math. Mr. Hellman thought it applied to me,
too, and I succumbed.

Everyone knows negative labels are bad, so you’d think this would be
a short section. But it isn’t a short section, because psychologists are
learning how negative labels harm achievement.

No one knows about negative ability labels like members of stereo-
typed groups. For example, African Americans know about being
stereotyped as lower in intelligence. And women know about being
centerized as bad at math and science. But I’m not sure even they know
how creepy these stereotypes are.

Research by Claude Steele and Joshua Aronson shows that even
checking a box to indicate your race or sex can trigger the stereotype in
your mind and lower your test score. Almost anything that reminds you
that you’re black or female before taking a test in the subject you’re sup-
posed to be bad at will lower your test score—a lot. In many of their stud-
ies, blacks are equal to whites in their performance, and females are equal
to males, when no stereotype is evoked. But just put more males in the
room with a female before a math test, and down goes the female’s score.

This is why. When stereotypes are evoked, they fill people’s minds
with distracting thoughts—with secret worries about confirming the
stereotype. People usually aren’t even aware of it, but they don’t have
enough mental power left to do their best on the test.

This doesn’t happen to everybody, however. It mainly happens to
people who are in a fixed mindset. It’s when people are thinking in terms
of fixed traits that the stereotypes get to them. Negative stereotypes say:
“You and your group are permanently inferior.” Only people in the fixed
mindset resonate to this message.

So in the fixed mindset, both positive and negative labels can mess
with your mind. When you’re given a positive label, you’re afraid of los-
ing it, and when you're hit with a negative label, you're afraid of deserving it.

When people are in a growth mindset, the stereotype doesn't disrupt their performance. The growth mindset takes the teeth out of the stereotype and makes people better able to fight back. They don't believe in permanent inferiority. And if they are behind—well, then they'll work harder and try to catch up.

The growth mindset also makes people able to take what they can and what they need even from a threatening environment. We asked African American students to write an essay for a competition. They were told that when they finished, their essays would be evaluated by Edward Caldwell III, a distinguished professor with an Ivy League pedigree. That is, a representative of the white establishment.

Edward Caldwell III's feedback was quite critical, but also helpful—and students' reactions varied greatly. Those with a fixed mindset viewed it as a threat, an insult, or an attack. They rejected Caldwell and his feedback.

Here's what one student with the fixed mindset thought: "He's mean, he doesn't grade right, or he's obviously biased. He doesn't like me."

"He is pompous asshole... It appears that he was searching for anything to discredit the work."

And another, deflected the feedback with blame: "He doesn't understand the conciseness of my points. He thought it was vague because he was impatient when he read it. He dislikes creativity."

None of them will learn anything from Edward Caldwell's feedback.

The students with the growth mindset may also have viewed him as a dinosaur, but he was a dinosaur who could teach them something.

"Before the evaluation, he came across as arrogant and overdemanding. [After the evaluation?] 'Fair' seems to be the first word that comes to mind. It seems like a new challenge."

"He sounded like an arrogant, intimidating, and condescending man. [What are your feelings about the evaluation?] The evaluation was seemingly honest and specific. In this sense, the evaluation could be a stimulus... to produce better work."

"He seems to be proud to the point of arrogance. [The evaluation?]"

He was intensely critical... His comments were helpful and clear, however. I feel I will learn much from him."

The growth mindset allowed African American students to recruit Edward Caldwell III for their own goals. They were in college to get an education and, pompous asshole or not, they were going to get it.

Do I Belong Here?

Aside from hijacking people's abilities, stereotypes also do damage by making people feel they don't belong. Many minorities drop out of college and many women drop out of math and science because they just don't feel they fit in.

To find out how this happens, we followed college women through their calculus course. This is often when students decide whether math, or careers involving math, are right for them. Over the semester, we asked the women to report their feelings about math and their sense of belonging in math. For example, when they thought about math, did they feel like a full-fledged member of the math community or did they feel like an outsider; did they feel comfortable or did they feel anxious; did they feel good or bad about their math skills?

The women with the growth mindset—those who thought math ability could be improved—felt a fairly strong and stable sense of belonging; And they were able to maintain this even when they thought there was a lot of negative stereotyping going around. One student described it this way: "In a math class, [female] students were told they were wrong when they were not (they were in fact doing things in novel ways). It was absurd, and reflected poorly on the instructor not to see the students' good reasoning. It was alright because we were working in groups and we were able to give & receive support among us students... We discussed our interesting ideas among ourselves."

The stereotyping was disturbing to them (as it should be), but they could still feel comfortable with themselves and confident about themselves in a math setting. They could fight back.

But women with the fixed mindset, as the semester wore on, felt a shrinking sense of belonging. And the more they felt the presence of