Self-Theories: The Mindset of a Champion

Carol S. Dweck
Stanford University

Introduction

There are things that distinguish great athletes—champions—from others. Most of the sports world thinks it's their talent. I will argue today that it's their mindset.

This idea is brought to life by the story of Billy Beane, told so well by Michael Lewis in the book *Moneyball.* When Beane was in high school, he was in fact a huge talent--what they call a "natural." He was the highest scorer on the basketball team, the quarterback of the football team, and the top hitter on the very competitive baseball team. And he was all these things without a great deal of effort. People thought he was the new Babe Ruth.

However, as soon as anything went wrong, Beane lost it. He didn't know how to learn from his mistakes, he didn't know how to practice to improve. Why? Because naturals shouldn't make mistakes or need practice. When Beane moved up to the baseball major leagues, things got progressively worse. Every at bat was a do-or-die situation and with every out he fell apart. Again, If you're a natural, you shouldn't have any flaws, so you can't face your deficiencies and coach or practice them away.

Beane's lack of emphasis on learning and his inability to function in the face of setbacks—where does this come from? With avid practice and the right coaching he could have been one of the greats. Why didn't he seek that? I will show how his behavior comes right out of his self-theory—out of a "fixed" mindset.

Self-Theories

In my work, I have identified two theories of ability that people may hold: an entity theory, in which people believe their abilities are fixed. You have a certain amount of intelligence or talent and that's that. You can learn new things but you can't change your ability. (I also call this the fixed mindset.)

In contrast, others hold an incremental theory of ability. They believe that their abilities are things they can cultivate and develop throughout their lives. They believe that through effort and learning, they can become smarter or more talented. It's not that they deny differences among people—that some people may know more, learn faster or even have more natural facility in area. But what they focus on is the idea that everyone can get better over time. (I also call this the growth mindset.)

Self-Theories and Goals

We have found in our research that these theories or mindsets set up completely different motivational systems. The fixed theory, in which you have only a certain amount of a valued talent or ability. leads people to put a premium on "performance goals." A performance goal is the goal of proving that you have an admirable amount of that talent or ability. When they are focused on performance goals, people try to highlight their proficiencies and hide their deficiencies. In this mindset, people will reject valuable learning opportunities if these opportunities hold the risk of unmasking their shortcomings.

Doesn't everyone have shortcomings? Isn't that what learning is for—to overcome them? However, this mindset does not give people the leeway to expose and remedy their weaknesses because any weakness can indicate a permanent lack of ability.

In contrast, the incremental theory, in which you can develop your ability, leads people to want to do just that. It leads them to put a premium on "learning goals"—the goal of acquiring new skills, mastering new tasks, improving (instead of proving) your ability. Here people are willing to take risks and make mistakes, since this is a natural part of learning and since in this growth-oriented mindset, mistakes do not represent a judgment of their permanent qualities.

This difference in goal-seeking is starkly demonstrated in a study I performed with Ying-yi Hong, C.Y. Chiu, Derek Lin, and Wendy Wan. In this study, we recruited entering students at the University of Hong Kong, an elite university where everything—classes, textbooks, term papers, exams—is in English. But not all incoming students are proficient in English. Surely they would be eager to improve their English skills. So, we told them that the faculty was thinking of offering a remedial English course and asked them how likely they were to take it if it were offered.

For the students we recruited, we knew their English proficiency level and we knew which self-theory they endorsed. What we found was interesting. The students with the incremental theory who were not proficient in English, were enthusiastic about taking a course that would remedy their important deficiency and, thus, allow them to perform better in their academic work. However, the students with the entity theory were not enthusiastic. They did not indicate that they were likely to take the course. In other words, they would prefer to put their future in jeopardy than expose a deficiency.

In other studies, we've seen students in a fixed mindset lie about their deficiencies. In one study, students performed some very challenging sets of problems and then were asked to write about their experiences to students in another school—students they would never meet. There was a place on the sheet where they were asked to report their scores.

Almost 40% of the students in the fixed mindset, perhaps feeling that their poor scores were a reflection of their permanent ability, lied about their scores. Only 10% of those in the growth mindset saw fit to falsify their performance. Like Billy Beane, those in the fixed mindset didn't think they should make mistakes!

By the way, it's clear that both performance and learning goals are important in a sports setting. It's important to validate your abilities through high quality performance in a competitive setting, and it's also important to grow your skills over time. The problem with an entity theory is twofold. One is that any lapse in performance is a threat to people's sense of their underlying ability and hence their sense of their future. And the second is that this great concern with ability tends to drive out learning goals, often when they are most needed. And it's hard to see how people can thrive in the world of sports if they don't have strong learning goals.

Self-Theories and Effort

As we have seen, people in the fixed mindset feel measured by setbacks and mistakes. They also feel measured by the very fact of exerting effort. They believe, like Billy Beane, that if you have ability, you shouldn't need effort. Things come easily, they say, to people who are true geniuses. There is no important endeavor in life—certainly not in the sports world—that can be accomplished without intense and sustained effort. Yet in this mindset, it's a sign of lacking talent or ability.

In contrast, people in the growth mindset understand that effort is the way that ability is brought to life, allowed to reach fruition, and ultimately improved. Far from indicating a lack of talent, they believe that even geniuses need great effort to fulfill their promise. In other words, they subscribe to Thomas Edison's formula: Genius is 1% inspiration and 99% perspiration.

Self-Theories and Mastery-Oriented Coping

It will come as no surprise that the self-theories, with their different emphases on learning and effort, lead to different ways of coping with difficulty. Basically, the entity theory often leaves people few good ways of reacting to setbacks. In one study, students with a fixed mindset told us that if they did poorly on a test—even if it were in a new course and one they liked a lot—they would study *less* in the future and would seriously consider cheating. This is how people cope when they think setbacks mean they lack permanent ability.

In contrast, those students with an incremental theory said they would study more or study differently. They planned to take charge of the situation and work to overcome the setback.

Moreover, we find that people in this incremental framework not only take charge of improving their skills, they take charge of their motivation as well. Despite setbacks—or even because of them—they find ways to keep themselves committed to and interested in the task at hand. Instead, students with an entity framework lose interest as they lose confidence. As the difficulty mounts, their commitment and enjoyment go down. Since all important endeavors involve setbacks sooner or later (more likely, sooner *and* later), it is a serious liability to lose interest and enjoyment just when you need greater effort.

To summarize thus far, an entity theory framework leads people to value looking good over learning, to disdain and to fear effort, and to abandon effective strategies just when they need them most. An incremental framework, on the other hand, leads people to seek challenges and learning, to value effort, and to persist effectively in the face of obstacles. What's more, it allows people to sustain their enjoyment even when the going gets rough.

Billy Beane, over time, actually came to recognize that these incremental ingredients--the ability the to see setbacks as a natural part of learning, the ability to improve through effort, and the ability sustain enjoyment and commitment-- were keys to success in the sports world. With this knowledge, as general manager of the Oakland Athletics, he led his team to several seasons of almost record-breaking wins on almost the lowest budget in baseball.

Naturals Revisited

But aren't there people who are true naturals? Michael Jordan? Babe Ruth? Wasn't Babe Ruth this out-of-shape guy who dragged his paunch to the plate and belted out his home runs? An examination of almost any of the greats will reveal people who practiced like fiends and honed their skills over many years. The story of Babe Ruth's development as a home-run king is interesting. Ty Cobb argued that it was Ruth's career as a pitcher that helped him become a great hitter. No one expected a pitcher to hit well, so Ruth could experiment with his big swing, seeing what worked and what didn't. When it didn't work, nobody cared. After all, he was the pitcher. Over time, he learned more and more about how to control his swing, so that when he became an outfielder, he was ready to hit.

Any "natural" you can name—Jackie Joyner-Kersee, Mia Hamm, Muhammad Ali—just look more closely and you can see the discipline, perseverance, and commitment that went into their success. Sure, they had talent, but they also had the right mindset.

Self-Theories and Confidence

Isn't motivation just a matter of confidence? To some extent, yes, but to me one of the most fascinating findings in all of my research is the fact that within the incremental framework, with its focus on growth, it is far easier to sustain your confidence. In the entity framework, with its focus on proving your ability, a poor performance casts doubt on your deep-seated ability and can undermine your confidence. Someone else's good performance can undermine your confidence ("Maybe they have more talent than I do.") Even needing effort and practice can undermine your confidence. So it's a constant battle to stay confident in the face of inevitable challenge.

However, in the incremental framework, making mistakes or even having clear deficits doesn't mean you aren't or won't be good at something. It's simply an occasion for learning. Moreover, you don't need a wagon-load of confidence to embark on learning. You just need to believe in improvement over time.

Some years ago, I received a letter from a competitive swimmer who had come across my work. She told me she had always had a confidence problem. Coaches told her to believe in herself 100%--never to doubt herself—but she couldn't do it. Every time she posted a disappointing time or lost a meet, she fell into self-doubt. However, thinking of things in learning framework—where setbacks are just information about what you need to do in the future—now allowed her to keep things in perspective and maintain confidence in those very same situations. The setbacks simply meant: Get back to work.

The Idea of Potential

Many of the scouts in the sports world scouted for naturals, people who looked like superstars-- were shaped like superstars, moved like superstars. If they didn't look the part, they weren't recruited. Yet Ben Hogan, one of the greatest golfers of all time did not have the grace of a natural golfer. Muhammad Ali actually did not have the build of the natural boxer. He did not have a champion's fists, reach, chest expansion, and heft. People gave him no chance against Sonny Liston, who seemed to have it all. Mugsy Bogues at 5'3", little quarterback Doug Flutie—anyone could look at them and tell you they were not naturals and by that they would mean they did not have the potential to make it.

Within an entity theory framework of fixed traits, potential is easy to judge. You just look at the person's gifts right now and project them into the future. Talented now equals talented in the future. Not talented now equals not talented in the future. Boy, that was easy!

Yet within an incremental framework, potential is hard to judge. Sure "natural talent" buys you a lot, and if you're accomplished now, you've got a leg up on others. But after that you cannot know where someone might end up with years of passion, discipline, and commitment.

The most dramatic example of how hard it is to judge potential from current ability is contained in the book *Drawing on the Right Side of the Brain.* The author, Betty Edwards, is an art instructor who leads workshops for people who wish to learn to draw better. In her book, she shows the self-portraits drawn on Day 1 by the students in one of her workshops. Some of the self-portraits are excellent and others are the equivalent of stick figures—primitive, chlldish, and completely devoid of talent. She then show the self-portraits done by these same people five days later at the end of the workshop. *All* of them were amazing—detailed, dramatic, professional. What's more, those who started out better did not necessarily end up better.

Now, drawing is often considered to be one of those talents where you have it or you don't. Yet Edwards' before and after pictures demonstrate the striking fact that diagnosing someone's talent at Time 1 does not tell you their ability at Time 2. Just because some people

don't do well without instruction, it does not tell you that they will still lag behind others when they do have instruction.

Self-Theories in Sport

Recently, Stuart Biddle (and his colleagues) and Yngvar Ommundsen have taken self-theories directly into the domain of sports. Biddle and his colleagues have created a questionnaire that assesses young people's entity and incremental theories about their sports ability. For example, belief in an entity theory is represented by questions like:

*You have a certain level of ability in sport and you cannot really do much to change that level."

"Even if you try, the level you reach in sport will change very little."

"To be good at sport you need to be naturally gifted."

An incremental theory and a learning approach are represented by questions like:

"How good you are at sport will always improve if you work at it."

"If you put enough effort into it, you will *always* get better at sport."

*To be successful in sport you need to learn techniques and skills and practice them regularly."

This questionnaire has produced a number of interesting findings. First, entity and incremental beliefs predict different goals and views of success, with entity theorists saying they feel most successful when they beat out others (a common, legitimate, but limiting view of success in sports), but incremental theorists saying they feel most successful when they improve and master new things (a view that will serve best in the long haul). And indeed *many* top athletes and coaches (like the legendary coach John Wooden) stress that they care less about the win per se than that they gave all and stretched themselves.

An incremental view also predicted the extent to which participants said they enjoyed sports. Incremental athletes like Michael Jordan and Tiger Woods love their sport, but entity athletes like John McEnroe, although as talented as they come, did not. McEnroe was so focused on winning and so anxious about looking good that he lost any zest for the game that he might have had when he started out. (By the way, by his own admission, his tantrums were designed to cover up when he was losing his grip on a match. Such defensiveness—in place of perseverance--- is yet another symptom of the entity framework.)

Ommundsen, in his research, also found that an incremental theory predicted a learning stance toward sports, including the tendency to take an analytic stance toward one's activities:

"If the activities or exercises are difficult to understand, I change the way I approach them."

As opposed to:

"When the activities or exercises are difficult, I give up or take on the easy ones."

Also indicative of a learning stance was incremental theorists' willingness to ask for help (instead of hiding their deficiencies).

He found, as well, that holding an entity theory directly gave rise to increased levels of anxiety and reduced satisfaction in physical education classes:

Anxiety: "Before I compete, I worry about not performing well."

Satisfaction: "When taking part in PE, I usually wish the class would end quickly."

As opposed to:

"I usually enjoy taking part in PE lessons."

"I usually find that time flies when I am taking part in PE activities."

Finally, Ommundsen found that an entity theory predicted self-handicapping, a defensive strategy designed to protect people's view of their ability even as it sabotages their chances for success. Specifically, holding an entity theory was positively related to (and holding an

incremental theory was negatively related to) the tendency to recognize oneself in the following statements:

"Some pupils fool around the night before a test in PE so that if they don't do as well as they hoped, they can say that is the reason."

"Some pupils let their friends keep them from paying attention in PE classes or from practicing. Then if they don't do well they can say that is the reason."

Thus, this work, which takes self-theories directly into the world of sport, provides exciting support for the view that passion and excellence in sport are guided by people's self-theories about their sports abilities.

Where Do Self-Theories Come From?

More and more we are finding that self-theories are fostered by the kind of feedback students get from the people who evaluate them: their parents, their teachers, and presumable their coaches.

First, we have found that when adults evaluate kids on their traits (like intelligence or goodness)—even when the adult offers *praise* for these traits—it puts kids in an entity theory framework. For example, in one set of studies, we gave children some problems to solve from a nonverbal IQ test and then, in one condition, lauded their performance and praised them for their intelligence. These children

- now favored an entity theory of intelligence (compared to a group that was praised for their effort)
- when then asked about the task they would like to work on next, rejected an opportunity to learn in favor of a chance to look smart again
- lost interest in the task when it became harder, and
- performed poorly on the trial that followed the difficult problems.

These are the children who lied about their performance when asked to report about the task and their scores on it to students in another school.

In contrast, students who were praise for the *process* they engaged in—in this case, their effort-- rather than for their traits:

- now expressed a more incremental theory of intelligence
- overwhelmingly went for the task that would give them a chance to learn
- maintained their interest when the task became harder, even when it exceeded their abilities, and
- performed exceedingly well on the trial that followed the difficult problems.

In studies of children and parents, as well, we have found that parents who focus on judging their children's traits have children who endorse an entity theory, whereas parents who focus on giving feedback about their children's process—learning, studying, effort, strategies—have children who endorse an incremental theory.

It would be fascinating to look at this with coaches too. The illustrious John Wooden, who coached the UCLA basketball team to 10 NCAA championships, constantly focused on his players' learning and improvement. Although he recognized that some players had more talent than others, he was committed to developing each player's ability to the fullest. As an example, he recruited another player the same year he recruited the great Bill Walton. He informed this player, who played the same position as Walton, that he might get very little playing time in actual games, but he assured him that he would be offered professional contract when he graduated. True to Wooden's promise, this player not only got a pro contract, but was named rookie of the year in his league.

Moreover, Wooden tells countless stories about players who arrived at UCLA seeming like sorry (even hopeless) raw material, but who blossomed into top players on his championship teams. By focusing on process and learning, Wooden seemed to imbue his players with a belief in their own development—a belief that paid good dividends.

Can Self-Theories Be Changed?

Can an incremental theory be taught and will people reap benefits from learning it? In four studies to date (two of ours and two by Joshua Aronson and his colleagues), workshops have been developed to teach an incremental theory. In these workshops, students (from junior high through college, depending on the study) learned that the brain was a dynamic, malleable organ and that every time they learned something new their brain formed new connections. Over time, these proliferating connections would make them smarter. Students were also shown how this idea could be applied to their schoolwork. These interventions were relatively modest, but had rather immediate and striking effects.

In every one of these studies, students who learned the incremental theory of intelligence showed significant gains in grades and/or achievement test scores. In some studies, these gains were made relative to control groups that were also given noteworthy interventions, such as an intervention involving training in important study skills.

In one of our studies, teachers singled out the students who had been in the incremental intervention and noted clear changes in their motivation (even though these teachers were blind to the intervention condition their students were in). Here are some of the things they said:

> "L., who never puts in any extra effort and often doesn't turn in homework on time, actually stayed up late working for hours to finish an assignment early so I could review it and give him a chance to revise it. He earned a B+ on the assignment (he had been getting C's and lower)."
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> "Lately I have noticed that some students have a greater appreciation for improvement . . . R. was performing below standards . . . He has learned to appreciate the improvement from his grades of 52, 46, and 49 to his grades of 67 and 71 . . . He valued his growth in learning Mathematics."
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> "M. was far below grade level. During the past several weeks, she has voluntarily asked for extra help from me during her lunch period in order to improve her test-taking performance. Her grades drastically improved from failing to an 84 on the most recent exam."
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> "Positive changes in motivation and behavior are noticeable in K. and J. They have begun to work hard on a consistent basis."
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> "Several students have voluntarily participated in peer tutoring sessions during their lunch periods or after school. Students such as N., and S. were passing when they requested the extra help and were motivated by the prospect of sheer improvement."

These findings brought home to me the idea that motivation and love of learning are always lurking right there, right beneath the surface. No one ever lives happily ever after with the idea that they're dumb or incapable of learning. As L., the young man in the quote above, said as we introduced the incremental theory: "You mean I don't have to be dumb? The incremental theory allows people to open up to the possibility of growth and improvement—a possibility that may have been closed to them before.

It would be fascinating to see how an incremental intervention works in the domain of sport—to see the impact that it has on the desire to practice, the enjoyment of sport, and the ability to cope effectively with setbacks, especially for those who have been turned off the joy of sport. It would also be fascinating to look at the impact of such interventions on elite athletes as well. Would it help "naturals" to develop the attitudes and habits that will allow them to fulfill their potential, instead of going the way of Billy Beane. Finally, it would be fascinating to see what an incremental intervention does for teamwork. Instead of each player vying to be the most talented star, trying to look better than their teammates, would an incremental theory foster a more cooperative, learning-together environment?

Conclusion

Without denying the importance of that thing called "talent," I have tried to show that something else—an athlete's mindset—can be equally important. I have described one mindset, built around a belief in fixed traits, that can limit athletes' ability to fulfill their potential. It can do this by making them prize looking good over learning, by making their confidence vulnerable in the face of setbacks, and by fostering defensive strategies over perseverance and commitment. And I have described another mindset, built around the belief in expandable skills, that can foster athletes' ability to fulfill their potential by making them prize learning, by making confidence (in improvement) easier to maintain, and by fostering effective strategies and sustained effort in the face of difficulty. Even more important, this mindset can be learned.

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