

The Mindset of a Champion



by Carol Dweck *Lewis & Virginia Eaton Professor of Psychology*

There are things that distinguish great athletes—champions—from others. Most of the sports world thinks it's their talent, but I will argue 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* (Lewis, 2003). When Beane was in high school, he was in fact a huge talent—what they call a “natural.” He was the star of the basketball team, the football team, and the baseball team—*and he was all of these things without much 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, nor did he know how to practice to improve. Why? Because naturals shouldn't make mistakes or need practice. When Beane moved up to baseball's major leagues, things got progressively worse. Every at-bat was a do-or-die situation and with every out he fell apart yet again. If you're a natural, you believe that you shouldn't have deficiencies, so you can't face them and coach or practice them away.

Beane's contempt for learning and his inability to function in the face of setbacks—where did 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 mindset.

Mindsets

In my work, I have identified two mindsets about ability that people may hold (Dweck, 1999; Dweck, 2006; Dweck & Leggett, 1988). Some hold a fixed mindset, in which they see abilities as fixed traits. In this view, talents are gifts—you either have them or you don't.

Other people, in contrast, hold a growth mindset of ability. They believe that people can cultivate their abilities. In other words, they view talents as potentialities that can be developed through practice. It's not that people holding this mindset deny differences among people. They don't deny that some people may be better or faster than others at acquiring certain skills, but what they focus on is the idea that everyone can get better over time.

These mindsets and their lessons are highly applicable to the world of sports, but before we delve into that and before we delve more deeply into the psychology of the mindsets, let's address some questions that are frequently asked about mindsets:

Do people hold the same mindsets with respect to different traits? Not necessarily. People can hold one mindset about intelligence and another about sports ability. Whichever mindset they hold about athletic ability will guide their choices and their motivation in sports.

Are people's mindsets related to their level of ability in the area? No, at least not at first. People with all levels of ability can hold either mindset, but over time those with the growth mindset appear to gain an advantage (Aronson, Fried, & Good, 2002; Blackwell, Trzesniewski, & Dweck, 2006; Good, Aronson, & Inzlicht, 2003; Robins & Pals, 2002).

Are mindsets fixed or can they be changed? Mindsets are fairly stable beliefs, but they are beliefs, and beliefs can be changed. Later on, I will discuss interventions that altered students' mindsets and had a real effect on their motivation and performance.

Mindsets and Goals

We have found in our research that people's mindsets set up completely different motivations (see Molden & Dweck, 2006). The fixed mindset, in which you have only a certain amount of a valued talent or ability, leads people to want to look good at all times. You need to prove that you are talented and not do anything to contradict that impression, so people in a fixed mindset try to highlight their proficiencies and hide their deficiencies (see, e.g., Rhodewalt, 1994). In fact, we have found that they will often reject valuable learning opportunities if these opportunities hold the risk of unmasking their shortcomings (Dweck & Leggett, 1988; Hong, Chiu, Dweck, Lin, & Wan, 1999; Mueller & Dweck, 1998).

Doesn't everyone have shortcomings? Isn't that what learning is for—to overcome them? Of course. 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 growth mindset, in which you can develop your ability, leads people to want to do just that. It leads them to put a premium on learning. This difference is starkly demonstrated in a study I performed with Ying-yi Hong, C.Y. Chiu, Derek Lin, and Wendy Wan (1999). 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. To find out, 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. Students with a growth mindset about intelligence were eager for this course. It could help them master the very skills they needed. However, students with a fixed mindset were not enthusiastic. Because they did not want to expose their deficiency, they were willing to put their whole college career in jeopardy.

In another study (Mueller & Dweck, 1998), we've seen students in a fixed mindset lie about their deficiencies. 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 13% 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!

We have also studied the brain to examine the impact of mindsets on people's attention to ability-relevant information or to learning-relevant information (Dweck, Mangels, & Good, 2004). Here, college students came to the EEG lab, where an electrode cap was placed on their heads and recordings were made from the parts of the brain that reflected attentional processes as they performed a highly difficult task. Each time they answered a question on the task, they were told whether their answer was correct or incorrect, and then a little later were told the correct answer. What did they pay attention to?

The students who held a fixed mindset about intelligence paid attention only to whether their answer was right. Once they knew this, they had little further interest in learning what the right answer was. Thus, their interest in being right took strong precedence over their interest in learning, and we later showed that this significantly hurt their subsequent performance.

Students who held a growth mindset about intelligence paid close attention to the both kinds of information. They paid attention to whether their answer was right or wrong and they paid attention to what the right answer was. As a result, they did substantially better than students with the fixed mindset on a later test.

It's clear that both things—wanting to do well and wanting to learn—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 a fixed mindset 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, often when they are most needed. It's hard to see how people can thrive in the world of sports if they don't have strong desire to address their weaknesses and learn.

Mindsets 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 true ability, you shouldn't need a lot of effort (Blackwell, et al., 2005). Yet, there is no important endeavor in life—certainly not in the sports world—that can be accomplished and maintained without intense and sustained effort. However, in this mindset, it's a sign that you are lacking talent or ability.

This is serious because many young athletes who have a great deal of early ability can coast along for some time, outshining their peers. They may even come to equate athletic ability with the ability to outperform others without engaging in much practice or training. At some point, however, natural ability may not be enough, and others may begin to pass them by. Whether they can now learn to put in that needed effort is critical to their future success. Many do not.

In contrast, people in the growth mindset understand that effort is the way that ability is brought to life and allowed to reach fruition. Far from indicating a lack of talent, they believe that even geniuses need great effort to fulfill their promise. People with a growth mindset not only believe in the *power* of effort, they hold effort as a *value*. Ian Thorpe, the illustrious Australian swimmer, feels that as long as he's tried his best, he's been victorious. "For myself, losing is not coming second. It's getting out of the water and knowing you could have done better. For myself, I have won every race I've ever been in."

Mindsets and Coping with Setbacks

It will come as no surprise that the mindsets lead to different ways of coping with difficulty. Because in the fixed mindset, setbacks are seen as indicating a lack of ability, this mindset often leaves people few good ways of reacting to setbacks. In one study (Blackwell, et al., 2005), we found that those with a fixed mindset were more likely to say 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 a growth mindset said they would study more or study differently. They planned to take charge of the situation and work to overcome the setback.

When the going gets rough, people in the growth framework not only take charge of improving their skills, they take charge of their *motivation* as well (cf. Grant, 2004). Despite setbacks—or even because of them—they find ways to keep themselves committed and interested. Instead, students with a fixed 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.

Putting it all together, this means that a fixed mindset 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. A growth mindset, on the other hand, leads people to seek challenges and learning, to value effort, and to persist effectively in the face of obstacles.

Billy Beane, over time, actually came to recognize that these growth-mindset ingredients—the ability to see setbacks as a natural part of learning, the ability to improve through effort, and the ability to sustain enjoyment and commitment—were keys to success in the sports world (Lewis, 2003). With this knowledge, as general manager of the Oakland Athletics, he led his team to several seasons of almost record-breaking wins on nearly 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 (Creamer, 1974/1983). 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.

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

Mindsets 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 growth framework, with its focus on growth, it is far easier to sustain your confidence (see Blackwell, et al, 2005; Grant & Dweck, 2003; Mueller & Dweck, 1998; see also Jourden, Bandura, and Banfield, 1991; Martocchio, 1994; Wood & Bandura, 1989). In the fixed 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.") (see Butler, 2000). 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 growth 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 a growth 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, for people who looked like superstars, that is, were shaped like superstars and moved like superstars (Lewis, 2003). 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 (Dennis & Atyeo, 2003). Mugsy Bogues at 5'3" or the 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 a fixed mindset, 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 a growth 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—and good instruction.

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

Where Do Mindsets Come From?

More and more we are finding that mindsets are fostered by the kind of feedback students get from the people who evaluate them: their parents, their teachers, and presumably their coaches. Specifically, the mindsets are fostered by a focus on the *person* (e.g., talent or ability) as opposed to a focus on the *process* (e.g., effort, learning) (Dweck & Lennon, 2001; Kamins & Dweck, 1999; Mueller & Dweck, 1998).

First, we have found that when adults evaluate students on their abilities—even if the evaluation is positive—it puts students into a fixed mindset (Kamins & Dweck, 1999; Mueller & Dweck, 1998). For example, in one set of studies (Mueller & Dweck, 1998), we gave students some problems to solve from a nonverbal IQ test and then, in one condition, lauded their performance and praised them for their intelligence. These students

- now favored a fixed mindset 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 and performed poorly after the tasks became harder

These are the students who lied about their performance when asked to report their scores to students in another school.

However, students who were praised for the *process* they engaged in—in this case, their effort:

- now expressed a more growth mindset of intelligence
- overwhelmingly went for the task that would give them a chance to learn
- maintained their interest and their performance even after the task became harder.

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 (Wooden, 1972, 1997). 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 a professional contract when he graduated. True to Wooden's promise, this player not only got a pro contract, but was also named rookie of the year in his league.

Wooden also 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 Mindsets Be Changed?

Can a growth mindset be taught and will people reap benefits from learning it? In four studies to date—two from our lab (Blackwell, et al, 2005; 2007) and two from Joshua Aronson, Catherine Good and their colleagues (Aronson, Fried & Good, 2002; Good, Aronson, & Inzlicht, 2003)—workshops have been developed to teach a growth mindset. 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 growth mindset 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 (Blackwell, et al, 2007), teachers singled out the students who had been in the growth 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).”

“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.”

“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.”

It would be fascinating to see how a growth mindset 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 would allow them to fulfill their potential, instead of going the way of Billy Beane?

Finally, it would be fascinating to see what a growth mindset intervention does for teamwork. Instead of each player vying to be the most talented star—always trying to look better than his or her teammates—would a growth mindset 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 value looking good, being “the star,” and staying in their comfort zone over stretching themselves to learn new things. It can do this by making them feel that naturals should not have to work as hard as others to shine. And it can do this by fostering defensive strategies – a desire to hide mistakes or make excuses—instead of confronting the mistakes or deficiencies.

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.

In an honors thesis done with Stanford teams, my student, Richard Cox, found that athletes who believe that athletic success was due more to practice and hard work and less to natural ability had more success that next season. He also found that athletes who thought that their *coaches* believed in practice and hard work more than natural ability had more success. In fact, we are finding more and more that people absorb the mindset that is prevalent in their organization. This means that coaches must themselves adopt a growth mindset and send messages to their athletes that they believe in improvement and that they value the practices that lead to it.

This article, "The Mindset of a Champion", is adapted from an article of the same title originally published in Morris, T., Terry, P., & Gordon, S. (Eds.), Sport and exercise psychology: International perspectives. Morgantown, WV: Fitness Information Technology.

Carol Dweck is the Lewis and Virginia Eaton Professor of Psychology at Stanford University. Her work bridges developmental psychology, social psychology, and personality psychology, and examines the self-conceptions people use to structure the self and guide their behavior. Her research looks at the origins of these self-conceptions, their role in motivation and self-regulation, and their impact on achievement and interpersonal processes. This area of research is highly relevant to sports.