

Reading Excerpt 2: Gladwell, Malcolm. “The Art of Failure.” *The New Yorker*. 21 May 2000.

Why some people choke and others panic.

There was a moment, in the third and deciding set of the 1993 Wimbledon final, when Jana Novotna seemed invincible. She was leading 4-1 and serving at 40-30, meaning that she was one point from winning the game, and just five points from the most coveted championship in tennis. She had just hit a backhand to her opponent, Steffi Graf, that skimmed the net and landed so abruptly on the far side of the court that Graf could only watch, in flat-footed frustration. The stands at Center Court were packed. The Duke and Duchess of Kent were in their customary place in the royal box. Novotna was in white, poised and confident, her blond hair held back with a headband—and then something happened. She served the ball straight into the net. She stopped and steadied herself for the second serve—the toss, the arch of the back—but this time it was worse. Her swing seemed halfhearted, all arm and no legs and torso. Double fault. On the next point, she was slow to react to a high shot by Graf, and badly missed on a forehand volley. At game point, she hit an overhead straight into the net. Instead of 5-1, it was now 4-2. Graf to serve: an easy victory, 4-3. Novotna to serve. She wasn’t tossing the ball high enough. Her head was down. Her movements had slowed markedly. She double-faulted once, twice, three times. Pulled wide by a Graf forehand, Novotna inexplicably hit a low, flat shot directly at Graf, instead of a high crosscourt forehand that would have given her time to get back into position: 4-4. Did she suddenly realize how terrifyingly close she was to victory? Did she remember that she had never won a major tournament before? Did she look across the net and see Steffi Graf—Steffi Graf!—the greatest player of her generation?

On the baseline, awaiting Graf’s serve, Novotna was now visibly agitated, rocking back and forth, jumping up and down. She talked to herself under her breath. Her eyes darted around the court. Graf took the game at love; Novotna, moving as if in slow motion, did not win a single point: 5-4, Graf... Novotna was unrecognizable, not an elite tennis player but a beginner again. She was crumbling under pressure, but exactly why was as baffling to her as it was to all those looking on. Isn’t pressure supposed to bring out the best in us? We try harder. We concentrate harder. We get a boost of adrenaline. We care more about how well we perform. So what was happening to her?...

Human beings sometimes falter under pressure. Pilots crash and divers drown. Under the glare of competition, basketball players cannot find the basket and golfers cannot find the pin. When that happens, we say variously that people have “panicked” or, to use the sports colloquialism, “choked.” But what do those words mean? Both are pejoratives. To choke or panic is considered to be as bad as to quit. But are all forms of failure equal? And what do the forms in which we fail say about who we are and how we think? We live in an age obsessed with success, with documenting the myriad ways by which talented people overcome challenges and obstacles. There is as much to be learned, though, from documenting the myriad ways in which talented people sometimes fail.

“Choking” sounds like a vague and all-encompassing term, yet it describes a very specific kind of failure. For example, psychologists often use a primitive video game to test motor skills. They’ll sit you in front of a computer with a screen that shows four boxes in a row, and a keyboard that has four corresponding buttons in a row. One at a time, x’s start to appear in the boxes on the screen, and you are told that every time this happens you are to push the key corresponding to the box. According to Daniel Willingham, a psychologist at the University of Virginia, if you’re told ahead of time about the pattern in which those x’s will appear, your reaction time in hitting the right key will

improve dramatically. You'll play the game very carefully for a few rounds, until you've learned the sequence, and then you'll get faster and faster. Willingham calls this "explicit learning." But suppose you're not told that the x's appear in a regular sequence, and even after playing the game for a while you're not aware that there is a pattern. You'll still get faster: you'll learn the sequence unconsciously. Willingham calls that "implicit learning"—learning that takes place outside of awareness. These two learning systems are quite separate, based in different parts of the brain. Willingham says that when you are first taught something—say, how to hit a backhand or an overhead forehand—you think it through in a very deliberate, mechanical manner. But as you get better the implicit system takes over: you start to hit a backhand fluidly, without thinking. The basal ganglia, where implicit learning partially resides, are concerned with force and timing, and when that system kicks in you begin to develop touch and accuracy, the ability to hit a drop shot or place a serve at a hundred miles per hour. "This is something that is going to happen gradually," Willingham says. "You hit several thousand forehands, after a while you may still be attending to it. But not very much. In the end, you don't really notice what your hand is doing at all."

Under conditions of stress, however, the explicit system sometimes takes over. That's what it means to choke. When Jana Novotna faltered at Wimbledon, it was because she began thinking about her shots again. She lost her fluidity, her touch. She double-faulted on her serves and mis-hit her overheads, the shots that demand the greatest sensitivity in force and timing. She seemed like a different person—playing with the slow, cautious deliberation of a beginner—because, in a sense, she was a beginner again: she was relying on a learning system that she hadn't used to hit serves and overhead forehands and volleys since she was first taught tennis, as a child...

Panic is something else altogether. Consider the following account of a scuba-diving accident, recounted to me by Ephimia Morphew, a human-factors specialist at nasa: "It was an open-water certification dive, Monterey Bay, California, about ten years ago. I was nineteen. I'd been diving for two weeks. This was my first time in the open ocean without the instructor. Just my buddy and I. We had to go about forty feet down, to the bottom of the ocean, and do an exercise where we took our regulators out of our mouth, picked up a spare one that we had on our vest, and practiced breathing out of the spare. My buddy did hers. Then it was my turn. I removed my regulator. I lifted up my secondary regulator. I put it in my mouth, exhaled, to clear the lines, and then I inhaled, and, to my surprise, it was water. I inhaled water. Then the hose that connected that mouthpiece to my tank, my air source, came unlatched and air from the hose came exploding into my face.

"Right away, my hand reached out for my partner's air supply, as if I was going to rip it out. It was without thought. It was a physiological response. My eyes are seeing my hand do something irresponsible. I'm fighting with myself. Don't do it. Then I searched my mind for what I could do. And nothing came to mind. All I could remember was one thing: If you can't take care of yourself, let your buddy take care of you. I let my hand fall back to my side, and I just stood there."

This is a textbook example of panic. In that moment, Morphew stopped thinking. She forgot that she had another source of air, one that worked perfectly well and that, moments before, she had taken out of her mouth. She forgot that her partner had a working air supply as well, which could easily be shared, and she forgot that grabbing her partner's regulator would imperil both of them. All she had was her most basic instinct: get air. Stress wipes out short-term memory. People with lots of experience tend not to panic, because when the stress suppresses their short-term memory they still

have some residue of experience to draw on. But what did a novice like Morphew have? I searched my mind for what I could do. And nothing came to mind.

Panic also causes what psychologists call perceptual narrowing. In one study, from the early seventies, a group of subjects were asked to perform a visual acuity task while undergoing what they thought was a sixty-foot dive in a pressure chamber. At the same time, they were asked to push a button whenever they saw a small light flash on and off in their peripheral vision. The subjects in the pressure chamber had much higher heart rates than the control group, indicating that they were under stress. That stress didn't affect their accuracy at the visual-acuity task, but they were only half as good as the control group at picking up the peripheral light. "You tend to focus or obsess on one thing," Morphew says. "There's a famous airplane example, where the landing light went off, and the pilots had no way of knowing if the landing gear was down. The pilots were so focussed on that light that no one noticed the autopilot had been disengaged, and they crashed the plane." Morphew reached for her buddy's air supply because it was the only air supply she could see.

Panic, in this sense, is the opposite of choking. Choking is about thinking too much. Panic is about thinking too little. Choking is about loss of instinct. Panic is reversion to instinct. They may look the same, but they are worlds apart.

Why does this distinction matter? In some instances, it doesn't much. If you lose a close tennis match, it's of little moment whether you choked or panicked; either way, you lost. But there are clearly cases when how failure happens is central to understanding why failure happens....

Claude Steele, a psychologist at Stanford University, and his colleagues have done a number of experiments in recent years looking at how certain groups perform under pressure, and their findings go to the heart of what is so strange about choking. Steele and Joshua Aronson found that when they gave a group of Stanford undergraduates a standardized test and told them that it was a measure of their intellectual ability, the white students did much better than their black counterparts. But when the same test was presented simply as an abstract laboratory tool, with no relevance to ability, the scores of blacks and whites were virtually identical. Steele and Aronson attribute this disparity to what they call "stereotype threat": when black students are put into a situation where they are directly confronted with a stereotype about their group—in this case, one having to do with intelligence—the resulting pressure causes their performance to suffer.

Steele and others have found stereotype threat at work in any situation where groups are depicted in negative ways. Give a group of qualified women a math test and tell them it will measure their quantitative ability and they'll do much worse than equally skilled men will; present the same test simply as a research tool and they'll do just as well as the men. Or consider a handful of experiments conducted by one of Steele's former graduate students, Julio Garcia, a professor at Tufts University. Garcia gathered together a group of white, athletic students and had a white instructor lead them through a series of physical tests: to jump as high as they could, to do a standing broad jump, and to see how many pushups they could do in twenty seconds. The instructor then asked them to do the tests a second time, and, as you'd expect, Garcia found that the students did a little better on each of the tasks the second time around. Then Garcia ran a second group of students through the tests, this time replacing the instructor between the first and second trials with an African-American. Now the white students ceased to improve on their vertical leaps. He did the experiment again, only this time he replaced the white instructor with a black instructor who was much taller and heavier than the

previous black instructor. In this trial, the white students actually jumped less high than they had the first time around. Their performance on the pushups, though, was unchanged in each of the conditions. There is no stereotype, after all, that suggests that whites can't do as many pushups as blacks. The task that was affected was the vertical leap, because of what our culture says: white men can't jump.

It doesn't come as news, of course, that black students aren't as good at test-taking as white students, or that white students aren't as good at jumping as black students. The problem is that we've always assumed that this kind of failure under pressure is panic. What is it we tell underperforming athletes and students? The same thing we tell novice pilots or scuba divers: to work harder, to buckle down, to take the tests of their ability more seriously. But Steele says that when you look at the way black or female students perform under stereotype threat you don't see the wild guessing of a panicked test taker. "What you tend to see is carefulness and second-guessing," he explains. "When you go and interview them, you have the sense that when they are in the stereotype-threat condition they say to themselves, 'Look, I'm going to be careful here. I'm not going to mess things up.' Then, after having decided to take that strategy, they calm down and go through the test. But that's not the way to succeed on a standardized test. The more you do that, the more you will get away from the intuitions that help you, the quick processing. They think they did well, and they are trying to do well. But they are not." This is choking, not panicking. Garcia's athletes and Steele's students are like Novotna. They failed because they were good at what they did: only those who care about how well they perform ever feel the pressure of stereotype threat. The usual prescription for failure—to work harder and take the test more seriously—would only make their problems worse.

That is a hard lesson to grasp, but harder still is the fact that choking requires us to concern ourselves less with the performer and more with the situation in which the performance occurs. Novotna herself could do nothing to prevent her collapse against Graf. The only thing that could have saved her is if—at that critical moment in the third set—the television cameras had been turned off, the Duke and Duchess had gone home, and the spectators had been told to wait outside. In sports, of course, you can't do that. Choking is a central part of the drama of athletic competition, because the spectators have to be there—and the ability to overcome the pressure of the spectators is part of what it means to be a champion. But the same ruthless inflexibility need not govern the rest of our lives. We have to learn that sometimes a poor performance reflects not the innate ability of the performer but the complexion of the audience; and that sometimes a poor test score is the sign not of a poor student but of a good one....