

An Expert Take on Performing Under Pressure

Psychology professor Sian Beilock studies how people think in stressful situations—and why they choke



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By
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Feb. 3, 2017 1:50 p.m. ET

University of Chicago psychology professor Sian Beilock has spent years investigating how people perform under pressure—and how they can avoid the dreaded choke. The research has proved useful in her own life.

For example, to boost her concentration, she might [take a walk outside](#) before a big meeting. And if she experiences the beating heart and sweaty palms of anxiety before a speech, she talks

herself into thinking they're signs that she's excited and ready to go—not that she's about to flop. “I've started practicing a lot of what I preach,” she says.

Dr. Beilock, who just turned 41 and also serves as the executive vice provost of the University of Chicago, has used performance tests and neuroimaging to figure out why people think differently under stress. She has published more than 100 papers on the subject. Her most recent book, “How the Body Knows Its Mind” (2015), discusses what scientists have learned about the influence of body movement on brain activity. It includes tips such as pacing around a room for a creativity boost.

Last month, Dr. Beilock won the 2017 Troland Research Award from the National Academy of Sciences for her research. The \$75,000 prize is given to two scientists age 40 or under in recognition of unusual achievements in experimental psychology. She plans to use the money to support her latest research, on helping children overcome anxiety and pressure in school (though she did allow herself one fun purchase with the prize money, a pair of black boots).

Dr. Beilock is particularly interested in children's attitudes toward math. She was struck by how many smart people, including her teenage stepdaughter, talk about “not being a math person,” but she has rarely heard people say the same for reading. In a [study](#) published in 2015 in Psychological Science, she and her team found that the first- and second-grade children of parents who were anxious about math were more likely to have math anxiety and perform worse in the subject, but only when the parents frequently helped out on math homework. “Involvement is good, but it can backfire if parents are really worried or don't like math,” she says.

She is investigating ways to get parents more involved in a nonthreatening way, such as bringing math into regular conversation, and [has used brain imaging](#) to shed more light on the issue. She has found that when students with math anxiety think about doing math, the pain centers of their brains activate—suggesting that training in the control of negative emotions could help to boost their math scores.

Dr. Beilock became interested in cognitive psychology at an early age. The daughter of two lawyers, she grew up in the San Francisco Bay Area and played soccer in a program meant to develop athletes for the Olympics. As a goalkeeper, she was often under pressure and wondered

why she sometimes played her worst when she wanted to play her best. She got a Ph.D. in psychology and kinesiology (the study of body movement) at Michigan State University and joined the University of Chicago faculty in 2005.

She and her husband, an evolutionary biologist at the University of Chicago, have three children—two teenagers from his first marriage and one 5-year-old together. In her down time, Dr. Beilock likes to run, do yoga and play the violin. She and her daughter share a violin teacher, but she makes sure to have her own lesson separately, not with her daughter. “I am trying not to stress her out!” she jokes.

She’s found that people are capable of making just about anything feel like a stressful, high-stakes activity. “Some of the greatest chokes are on the Olympic stage, but they also happen when you can’t say eloquently what you want to say in a meeting,” she says. Even parallel parking can cause panic. When her husband is in the car, Dr. Beilock says that she often has trouble. “I’m really good when he’s not there,” she says.

Overthinking often trips people up. “It’s paralysis by analysis,” she says—people get confused when they think too much about what they’re doing.

At her lab—the Human Performance Laboratory, where she is director—Dr. Beilock and her colleagues explore the physiological mechanisms by which people buckle under pressure. They have measured the amount of cortisol in a person’s saliva to gauge stress levels and have used neuroimaging to see which areas of the brain are activated during high-pressure situations. They also have tested reaction time and accuracy to understand, for instance, why golfers choke in front of spectators.

She has often used golfers in her research. For one thing, it’s easy to stress them out by getting them to think about the technical aspects of their swing. If you really want to mess with a golfer’s game, she says, you could just say, “That was a great shot! What were you doing with your elbow?”

As a general piece of advice, she encourages people to write down their worries before an event. In a [paper](#) published in the journal *Science* in 2011, she studied groups of students about to take

a test. Those who spent 10 minutes before the test writing down their worries scored higher than those who didn't, and especially students who reported being anxious about tests got higher scores.

“When we're worried, it captures our attention,” says Dr. Beilock. “It's like doing two things at once.” Since we only have a limited amount of attention, she says, it's hard to recall information and worry at the same time. Writing it all down makes the worries concrete and helps to prevent them “from popping up and distracting you,” she says.

Dr. Beilock also has found that “pausing the choke,” such as taking a break to meditate or to take a walk during a stressful situation like an argument, can calm us. “We think of the mind as telling the body what to do,” she says, “but it's not a one-way street.”