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## How Not to Fail Under Pressure

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Reviewed by John M. Grohol, Psy.D. on September 28, 2010

We have all watched the unthinkable happen, and maybe it has happened to us — choking or performing in a subpar manner because of a feeling of too much pressure.

A University of Chicago psychologist has studied the problem and says that it goes deeper than “just nerves.” Sian Beilock says the failures are preventable, a result of information [roadblocks](#) in the brain.

By studying how the brain works when we are doing our best — and when we choke — Beilock has formulated practical ideas about how to overcome performance lapses at critical moments.

“Choking is suboptimal performance, not just poor performance. It’s a performance that is inferior to what you can do and have done in the past and occurs when you feel pressure to get everything right,” said Beilock.

Some of the most spectacular and memorable moments of choking occur in sports when the whole world is watching.

Many remember golfer Greg Norman’s choke at the 1996 U.S. Masters. Norman had played brilliantly for the first three days of the tournament, taking a huge lead. But on the final day, his performance took a dive, and he ended the Masters five shots out of first place.

Choking in such cases happens when the polished programs executed by the brains of extremely accomplished athletes go awry.

In “Choke,” Beilock recounts famous examples of these malfunctions in the context of brain science to tell the story of why people choke and what can be done to alleviate it.

Thinking too much about what you are doing, because you are worried about losing the lead (as in Norman’s case) or worrying about failing in general, can lead to “paralysis by analysis.”

In a nutshell, paralysis by analysis occurs when people try to control every aspect of what they are doing in an attempt to ensure success.

Unfortunately, this increased control can backfire, disrupting what was once a fluid, flawless performance.

“My research team and I have found that highly skilled [golfers](#) are more likely to hole a simple 3-foot putt when we give them the tools to stop analyzing their shot, to stop thinking,” Beilock said.

“Highly practiced putts run better when you don’t try to control every aspect of performance.” Even a simple trick of singing helps prevent portions of the brain that might interfere with performance from taking over, Beilock’s research shows.

The brain also can work to sabotage performance in ways other than paralysis by analysis. For instance, pressure-filled situations can deplete a part of the brain’s processing power known as working memory, which is critical to many everyday activities.

Beilock’s work has shown the importance of working memory in helping people perform their best, in academics and in business.

[Working memory](#) is lodged in the prefrontal cortex and is a sort of mental scratch pad that is temporary storage for information relevant to the task at hand, whether that task is doing a math problem at the board or responding to tough, on-the-spot questions from a client.

Talented people often have the most working memory, but when worries creep up, the working memory they normally use to succeed becomes overburdened. People lose the brain power necessary to excel.

One example is the phenomenon of “stereotype threat.” This is when otherwise talented people don’t perform up to their abilities because they are worried about confirming popular cultural myths that contend, for instance, that boys and girls naturally perform differently in math or that a person’s race determines his or her test performance.

Beilock’s research is the basis of her new book, “Choke: What the Secrets of the Brain Reveal About Getting it Right When You Have To.”

In *Choke*, Beilock describes research demonstrating that high-achieving people underperform when they are worried about confirming a stereotype about the racial group or gender to which they belong. These worries deplete the working memory necessary for success. The perceptions take hold early in schooling and can be either reinforced or abolished by powerful role models.

In one study, researchers gave standardized tests to black and white students, both before and after President Obama was elected. Black test takers performed worse than white test takers before the election. Immediately after Obama’s election, however, blacks’ performance improved so much that their scores were nearly equal with whites.

When black students can overcome the worries brought on by stereotypes, because they see someone like President Obama who directly counters myths about racial variation in intelligence, their performance improves.

Beilock and her colleagues also have shown that when first-grade girls believe that boys are better than girls at math, they perform more poorly on math tests. One big source of this belief? The girls’ female teachers. It turns out that elementary school teachers are often highly anxious about their own math abilities, and this [anxiety](#) is modeled from teacher to student. When the teachers serve as positive role models in math, their male and female students perform equally well.

Even when a student is not a member of a stereotyped group, tests can be challenging for the brightest people, who can clutch if anxiety

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