

## What Causes Choking Under Pressure? (And What Can We Do About It?)

### Description

I remember my first studio class in grad school. I was set to play the 5th Paganini Caprice, which I knew well, and had played before in auditions and competitions. Yet I was feeling strangely nervous for this studio class, even though there wasn't really anything at stake.

Needless to say, it did not go well. I rushed, played out of tune, flat-out missed a bunch of notes in the opening arpeggios, kept fumbling passages throughout, and there was no sense of line or direction musically. It was pretty embarrassing.

I choked, plain and simple. An “epic fail” as my kids would say (and yes, there's a [YouTube channel](#) for that).

Why does this sort of thing happen, anyway? And is there anything we can do about it?

### Is anxiety to blame?

At the time, I blamed my nerves. An easy target, and nerves do play a role. But in a sneakier way than we might think.

Namely, anxiety's physical effects are unpleasant and not necessarily helpful – but it's what all of this does to our *attention* and *focus* that may be the key factor in choking.

### Not all pressure is created equal

It might seem like pressure is pressure, whatever the source, but a [team of researchers](#) observed that not all pressure is quite the same.

In some situations, pressure comes from an attachment to a specific outcome, like winning first chair at a summer festival seating audition, or a prize at a major competition (“outcome pressure”).

In other situations, pressure comes from the fact that we are being watched and evaluated by other people (“monitoring pressure”).

And sometimes, we experience both.

Why does this matter?

## Two competing theories

Well, let's take a step back for a moment.

There are two sets of theories that seem to explain why we choke under pressure. Both make intuitive sense. There is evidence to support both theories. But...the theories propose mechanisms that are almost the *opposite* of each other.

What?!

### Theory #1: Distraction theories

One theory suggests that under pressure, our focus goes away from the music to irrelevant thoughts – like thinking about the other people in the room, and worrying about what they might think if we play poorly. But since our brain can think about only so much at once, the relevant and irrelevant thoughts end up competing for the same limited attentional resources, and something has to give.

For instance, playing solo Bach was always a challenge for me, not just because of the technical difficulty, but because I was always a little worried about the potential for memory issues<sup>1</sup>. But ironically, the more we worry about having a memory slip, the more likely we are to have one, because these worries prevent us from thinking about our [memory cues](#) and staying in the moment.

### Theory #2: Explicit monitoring theories

The other theory suggests that under pressure, our attention shifts to the physical execution of motor movements, and we try to micromanage all the individual steps, instead of trusting our “muscle memory” to take care of the job. The problem of course, is that once a skill becomes automatic, thinking about what exactly your thumb, elbow, wrist, and fingers are doing at each step of a tricky shift totally screws up your ability to execute what should be a fluid, effortless motion.

If you've ever had to sit or stand on camera, and were told to “just act natural,” you know how difficult it can be to do this when you're suddenly all self-conscious and don't remember how to stand like a normal person.

So in a nutshell, distraction theories suggest that we choke because our attention goes *away* from the task, while explicit monitoring theories suggest that we screw up because our attention goes *toward* the task.

So which is it? I mean, both can't be right, can they?

## Why both theories might be equally valid

Well, maybe they can.

What if the reason why both theories have data to back them up, is that the cause of choking depends on what *kind* of pressure we experience?

For instance, tasks which require a decent amount of “working memory” (the mental scratch pad we use to keep certain things in mind – like listening to our pianist, or making sure we take the right turn in our Bach) might suffer in response to *outcome pressure*. Where instead of focusing on the music, we are distracted by worries, and this leads to choking.

On the flip side, highly automatized skills – like difficult shifts and technical passages – might be more susceptible to choking when we experience *monitoring pressure* and think too much about technical execution.

## Two tasks

To test this theory, the researchers designed a series of studies that presented participants with two challenges.

**Task #1** was a relatively simple task, but required conscious attention and working memory for participants to be successful. So, if participants were distracted, their performance would suffer.

**Task #2** was more complex, and was designed to operate on a more implicit level, outside of conscious awareness. So, being distracted wouldn't make much of a difference in their performance, but paying too much attention to each step of their process definitely would.

## Two types of pressure

Everyone performed the task under no pressure to get a baseline of their performance.

And then one group of participants was told that if they and a partner could each improve their performance by 20%, they would both win money. They were informed that their partner had already met that criteria, so the prize money was all riding on their performance (outcome pressure).

Another group was told that their performance would be watched and videotaped, and that footage would be watched by other students and professors at the university, and possibly used in a film distributed nationwide for other researchers and psychology classes (monitoring pressure).

The results were pretty revealing.

## Pressure type predicts choking

When participants were worried about letting down their partner (outcome pressure), their performance on the more attention-heavy Task #1 suffered. But this type of pressure had no impact on Task #2 performance – the more “proceduralized” skill that could be executed outside of conscious awareness.

Conversely, when participants knew they were being watched (monitoring pressure), they seemed to overthink the steps of Task #2, and their performance went downhill. Performance on Task #1, on the other hand, did not change.

## Double jeopardy

Taken together, the results suggest that there is not just one pathway to epic fails, but **two** paths! Ack!

**Choking formula #1:** When a task requires that we be really focused on what we’re doing (like performing from memory), but outcome pressure kicks in and we worry about screwing up instead of staying focused on the task at hand, we’re susceptible to choking.

**Choking formula #2:** And when a task requires that we not overthink highly automated skills that operate best outside of conscious awareness (pretty much everything we do on our instruments), but monitoring pressure swoops in, we’re prone to choking yet again.

Argh. So what are we to do?

## Take action

Conceptually, it all boils down to training ourselves to maintain a very specific kind of focus and attention control on stage.

Worry about the situation, our nerves, our memory, etc., and we’re no longer thinking about the music, which is asking for trouble.

Obsess too much about technical execution, and we’re suddenly running complex motor movements on manual mode instead of relying on our inner autopilot to do the job – even though that’s what we spend all those hours in the practice room training it to do. This creates problems too.

So the key, is to focus more on musical expression (to counteract outcome pressure), and less on technical execution (to protect ourselves from monitoring pressure).

To focus on the *sound* we want to produce. The shaping of each *line*. The *character* of each little gesture. The underlying rhythmic *pulse*, the subtle nuances of *phrasing*, and so on.

Sounds an awful lot like what our teachers have always told us, no?

## Additional Resources

Researcher/author/Barnard College president Sian Beilock has given a great TED talk on choking: [Why we choke under pressure - and how to avoid it](#)

And there's a 4-min animated TED-Ed piece on choking too: [How to stay calm under pressure](#)

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