

Host: Robert Frederick

Hello and welcome to The Conjectural — an experiment in science news. I'm Robert Frederick. In this show, a story about confidence, making mistakes, learning from them, and moving on with scientific research.



There are some real, social benefits of appearing to be confident even when you're not. Of course, that's no surprise. Julie Andrews even sang about it in the 1965 movie *The Sound of Music*.

Singing: Julie Andrews

I have confidence in confidence alone. Oh help.

Host: Robert Frederick

But everything turned out just fine for Julie Andrews's character, Maria. After all, she had the knowledge and ability to be a perfect governess for the Von Trapp family. But what about when that confidence is unjustified? As cognitive psychologist Eric Stone puts it:

Interviewee: Eric Stone

Does having confidence in your abilities — in your knowledge — when that confidence is not in fact justified by your knowledge or your actual abilities, is that type of misplaced confidence a good or a bad thing?

Host: Robert Frederick

And by good or bad?

Interviewee: Eric Stone

So by good and bad, I mean very generally, good or bad outcomes. So anything that would impact you or your organization positively versus negatively. So I mean that very broad in terms of actual outcomes.

Host: Robert Frederick

So you might be overly confident in applying for a job you're unqualified for, but get it anyway and have a great salary and benefits — that's good. But then you end up being fired for incompetence — that's bad. You might be overly confident in your abilities as a doctor and so see a lot of patients in a short amount of time — that's good. But sometimes you didn't seek out the additional information you should have when doing medical diagnoses, and those patients you incorrectly diagnosed and treated sue you for malpractice — that's bad. You might be overly confident in how well you drive, and your darting in and out of traffic typically gets you to where you want to go quickly — that's good. But then you flip your car by taking a corner too fast and end up in the hospital — that's bad. Of course, if you don't take risks, Eric says...

Interviewee: Eric Stone

If you don't take risks, good things won't happen to you. So it may well be that the impact of confidence is to increase risk-taking. But the impact of risk-taking, whether that's good or bad, depends on the actual situation that we're talking about.

Host: Robert Frederick

The situations Eric studies are wide-ranging, from the good or bad outcomes from decisions made by financial analysts to the good or bad outcomes from decisions made by teenagers. Eric's a

cognitive psychology professor at Wake Forest University and researches judgement and decision-making — how decisions are made and how they can be improved.



Interviewee: Eric Stone

And really, to this date, there just is not much work that has really addressed which one of those beliefs is true: is confidence good or bad when that confidence is not justified by actual knowledge — and if it depends, what does it depend on, so what are the factors that actually determine when confidence is good or bad.

Host: Robert Frederick

Again, we're talking about misplaced confidence — when confidence is not justified by actual knowledge or abilities.

Interviewee: Eric Stone

And it's been sort of assumed that overconfidence is bad. It's been described as 'one of the seven deadly sins.' I mean how horrible is that! We're just all egotistical, sort of stuck-up people. But then at the same time, there is some academic work and a lot of work in the media and sort of a common layperson belief, that it's good to be confident. Right? That people who are confident may get better jobs — lots of good things happen to them. There's even been some work out recently on confidence poses where sort of striking a confidence pose can increase your confidence. And the assumption there is that that confidence is going to bring about a lot of positive effects.

Music: Madonna

Strike a pose.

Host: Robert Frederick

That assumption comes from other scientists, like Amy Cuddy, a social psychologist and associate professor at Harvard Business School. In her 2012 TED talk, she talked about power poses — so, standing like a superhero with fists on hips, elbows out, and legs at least shoulder-width apart. In her research, she asked if striking a power pose for 2 minutes would make you feel more powerful and so more confident. The answer, she found, was yes.

TED Talk: Amy Cuddy

And there's a lot of reason to believe that this is a valid way to looking at this. And social scientists have spent a lot of time looking at the effects of our body language or other people's body language on judgements. And we make sweeping judgements and inferences from body language. And those judgements can predict really meaningful life outcomes, like who we hire or promote, who we ask out on a date.

Host: Robert Frederick

But not what happens after that. So, if you use power poses but are really just a power poser — because your confidence is misplaced and unjustified by your actual knowledge or abilities — scientists don't yet know how to predict the outcome, ultimately, and in which situations it may be good or bad to have such unjustified confidence. Part of the reason for not knowing, Eric says, is that psychologists have been using two different analytical methods to analyze their data. Not knowing which to choose for his team's data, Eric decided to try both.

Interviewee: Eric Stone

We analyzed our data with both of them, and were rather bothered by the fact that they led to different conclusions.

**Host: Robert Frederick**

And that's a problem, not only for his team's research, but for the researchers who had used these same analytical methods before.

Interviewee: Eric Stone

We were having trouble wrapping our heads around it, and this is why the field — including us — had made some mistakes. We're not all just stupid. It really is fairly tricky. This led us to basically ask, "Well, what's different about these two methods when they both seem intuitively correct?"

Host: Robert Frederick

To figure it out, they needed more data.

Interviewee: Eric Stone

So one option would have been to get a hold of data from, say, 50 to 100 different experiments. However, because this is a very new field, those experiments don't exist yet. We could have conducted them, but that would have taken roughly 500 years, which we didn't have. So instead what we did was we manufactured some data under different hypothetical circumstances, called "simulations." And each simulation basically meant we constructed about a million data points.

Host: Robert Frederick

Fake people?

Interviewee: Eric Stone

Fake people. A million fake people, in fact.

Host: Robert Frederick

Simulating a million fake people allowed the researchers to systematically vary how outcomes correlated with knowledge or confidence, as well as how knowledge and confidence correlated with one another. In analyzing their data with the two different approaches...

Interviewee: Eric Stone

What we found was that in the majority, not all, but in the majority of the cases, the two analytic approaches produced very different answers to the questions.

Host: Robert Frederick

That does call into question the conclusions of some past research, but that kind of thing is pretty normal for science. Rather than righting past wrongs, Eric says he's focused on making sure the field has the right analytical approaches going forward.

Interviewee: Eric Stone

Because this is such a new field, we want to make sure that the field gets off really on the right track in starting to answer these questions for real. And again, these questions are: is it good or bad to have misplaced confidence?

Host: Robert Frederick

And so begin to answer those questions for real for everyone, including power posers.

**Singing: Julie Andrews**

I have confidence in confidence alone. Besides which you see, I have confidence in me.

Host: Robert Frederick

You've been listening to The Conjectural. Thanks to Eric Stone of Wake Forest University for being on the show. Find a transcript online at TheConjectural.com, give feedback and support, and subscribe to the show. Find us on SoundCloud and Apple's iTunes, too. Follow me on Twitter @TheConjectural. I'm Robert Frederick. Thanks for joining us!