The Science of Fear: Science Buzz Session – Part 2

SR: I’m Sandeep Ravindran, and welcome again to Science Sessions. This week we’re featuring the second of two podcast recordings from “The Science of Fear!” a lively discussion with psychology experts Daniel Pine and Mark Wiederhold held in Washington, DC on October 12, 2011. The event was part of our regular Science Buzz series, and was hosted by PNAS and the Koshland Science Museum.

In part 2, Daniel Pine and Mark Wiederhold answer fear-related questions from the audience, including how adult fears develop and how they can be treated. Some of the audience questions from the live event have been re-recorded. The first question is addressed to Dr. Pine.

Question: Hi. I have a fear of heights, but I don’t remember any traumas where I was at a height that would make me feel that way. What caused this fear?

DP: Well, so let me tell you two things about that. The first thing is, complex things like fears, they’re not caused by one thing. So, there isn’t one traumatic thing that happens to people to give them their fear. So that’s the first thing to say. The second thing to say, and one of the things that I’ve learned from my longitudinal work, what we’ve learned from other research, is people’s memories are amazingly bad. I have to say it’s really incredible and it’s really interesting. And the distortions that we have, and let just tell you one little story: we have many, many children that we followed for 20 years, alright, and we sat with them, and we got incredibly rich details of what they were afraid of, and when they were afraid of it. And we wrote it down, and we know it’s right, and there are volumes and volumes that we wrote with these patients that we saw over years. And then we saw them when they were about your age, and they said the exact same thing that you did, that “I never had this,” or “I never had that,” or “I wasn’t afraid of heights, I was afraid of cats, when I was little,” and then we went back and we looked at their notes, and they’re totally wrong. People, many times don’t remember at all, and then you point it out to them and you say, you know, here are the notes, and they look at you and they say, “Oh, no, your notes are wrong.”

Question: My question is, how do you get a 40 to 50 year old man to break that fear of going to the dentist?

DP: The key to breaking any fear is exposure. You gotta get over that hump. And if you can’t get exposed to the fear, you can’t get over it. So the trick is, how do you pick something that’s dangerous and scary enough to activate the part of the brain that you need to activate on the one hand, but is not so dangerous and not so scary that they can’t do it.
MW: Thinking of going to the dentist may be just too overwhelming, so what we’ll do is we’ll go a couple days back when you make the phone call to make the appointment, let’s deal with that first. And then let’s basically wait till the morning of your appointment—you don’t want to get out of bed, you don’t want to go, you’re gonna hide under the covers, and then let’s deal with that. So we can push it back a couple of steps where it’s not so overpowering, it’s not such a giant monster. We can break it down like that in individual little steps.

**Question:** Are there specific types of fear that are more difficult to treat?

**DP:** PTSD is probably the worst. Specific phobias are the easiest, they’re pretty easy to treat. And in general the more chronic the problem is the harder it is to treat.

**Question:** Hi, so last year PNAS published a paper showing that stress hormone can actually help treat people. Now that seems like a counterintuitive finding. Can you explain how that might work?

**MW:** So what we believe is going on is that the cortisol is allowing the brain permission to experience high levels of arousal during the course of the exposure treatment. And that’s why we think it’s more effective, because experiencing the higher level of arousal is exactly what you want to do with exposure, and then combined with the skills, we teach them to essentially handle that arousal or to process it more effectively.

**DP:** The key thing to take away from this though is not so much that cortisol is this great new treatment, but that these are a whole bunch of new treatments that are coming directly out of neuroscience. And this is something very new for mental disorders, and that’s what’s so exciting about it.

**Question:** I’m gonna end it on a more personal note. Have you, either of you had any fears that you have tried to treat?

**DP:** I mean, one of the interesting things about physicians in general, we become interested in things that have touched our own lives. You know, throughout my entire life I’ve always been touched and interested by anxiety in everybody around me including myself. Probably more than anything else that’s what’s motivated my own study.

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