Using virtual reality to overcome fear, reduce prejudice

STANFORD VIRTUAL HUMAN INTERACTION LAB

USA TODAY

While virtual reality mostly seems like fun and games, the Virtual Human Interaction Lab at Stanford University is using it for educational purposes. They're testing the possibility of VR as a use to overcome fears and learn empathy. MIchael Monday

Edward C. Baig, USA TODAY   *4:33 p.m. EDT June 17, 2015*

(Photo: Stanford Virtual Human Interaction Lab)

PALO ALTO, Calif. — I'm afraid of heights.

When the floor surrounding where I stood disappeared and I was left balancing on a narrow wooden plank some 33 feet above a pit, I struggled not to fall off the edge. I was about to hyperventilate.

What made this anxiety-wrenching episode all the more remarkable is that in reality my feet were firmly planted on the ground.

I was wearing Oculus Rift virtual reality headgear and experiencing a simulation inside the Virtual Human Interaction Lab at Stanford University.

Sure, I was intellectually aware of my actual physical surroundings: A lab room about 20 by 20 in size, with booming speakers, a vibrating floor, and special high tech cameras that track LED sensors worn on the body. This tracking system is accurate to within one-tenth of 1 millimeter. But my brain was tricked into believing I was suspended high above the ground.

The idea behind the simulated demo is that virtual reality can be used to help people overcome such phobias.

In another VR simulation, I faced an audience of avatars that kept fixed stares on me as I walked around the room, the goal being to help folks uncomfortable with public speaking.

"We study the transfer effects — how does an intense virtual reality experience change the way you think of yourself and others?" says Jeremy Bailenson, the founding director of the Stanford lab, who I first caught up with in April at New York's Tribeca Film Festival.

Virtual reality has been getting a lot of very real attention lately. Just last week, Facebook-owned Oculus previewed the consumer version of the Rift headgear that is expected out early next year. Oculus is working with Microsoft to stream virtual reality games to Rift via an Xbox One controller and Windows 10.

Microsoft is also partnering with Valve VR on that company's virtual reality system, while simultaneously pushing its own Windows 10-based HoloLens augmented reality initiative.

Game publisher Ubisoft has designs on virtual reality too. So does Sony, whose ambitions in the space are built around the Project Morpheus headset it expects to sell next year.

The special effects company Industrial Light & Magic is putting together a team to bring virtual and augmented reality experiences to *Star Wars*.

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A Silicon Valley company, Altspace VR, recently launched a social virtual reality platform built around shared experiences, such as watching movies and playing games.

And Google is trying to make virtual reality an affordable mainstream reality through its Cardboard initiatives.

While most of these virtual reality efforts are focused on game play and other forms of entertainment, the work at Stanford is squarely aimed on the potential social benefits of VR.

That translates to helping people combat fears, become more empathetic, reduce prejudice, adopt a healthier lifestyle, better withstand pain, manage their money, improve the environment, and even prepare for natural disasters.

In one such simulation, I was in a virtual factory with stacked boxes when an earthquake hit. The sound was loud, the floor vibrated and I raced for virtual cover.

"How can I give you the muscle memory to learn how in a split second what to do to survive a (real) earthquake?" Bailenson says. "VR is very good for rare moments and impossible moments. What happens in a world where anything — the most intense thing that anyone has ever done physically — can happen to everyone at the push of a button?"

In another demo, you get to gaze into a virtual mirror to see an avatar that is supposed to represent you. But then your identity changes — from white to black, from young to old, from male to female. When you turn around, you face discrimination or abuse from another avatar. The idea is that by experiencing such treatment first hand, you'll hopefully become more empathetic towards others.

Some of Bailenson's other demos are environmentally focused. For example, I explored the ocean depths to see the long-term impact of ocean acidification.

A demo aimed at 20-somethings shows them what they'll look like when they reach Social Security age to get them thinking about saving money now.

And when you come into contact with a virtual doppelgänger, you might be encouraged to exercise more. If your virtual alter ego can do 100 push ups, why can't you?

Bailenson works with kids in the lab too as they get to interact with virtual *Sesame Street* characters Elmo and Grover.

In a virtual art gallery of priceless masterpieces, you can walk around Michelangelo's famous statue of David, and even bump into him, something you can't do of course to the real sculpture in Florence.

For all the best intentions, the non-profit Stanford lab is typically limited to tours of up to 25 people in a given day so the question becomes how do these ideas and simulations spread? Bailenson believes that once tech companies start putting VR hardware in the home, "we will be able to run experiments through them."

Stanford is by no means the only institution playing up VR for social or educational benefits. With Cardboard, Google is running a pilot program in U.S. and foreign classrooms called Expeditions to take students on virtual field trips under the sea, to Mars and to other places otherwise out of reach.

It's comforting to know VR technology isn't all about fun and games.

It is reaching literally for the heights.