

Can VR Really Make You More Empathetic?

The year is 1994, and the bleeding edge of virtual reality is Dactyl Nightmare: an arcade game where you run from swooping pterodactyls. Jeremy Bailenson, a college student then, got his first taste of VR playing it at an arcade in San Francisco. “The technology was of course horrific back then,” he says.

But virtual reality isn’t just about video games anymore. Artists, activists, and journalists now see the technology’s potential to be an empathy engine, one that can shine spotlights on everything from the [Ebola epidemic](#) to [what it’s like to live in Gaza](#). And Bailenson has been at the vanguard of investigating VR’s power for good.

For more than a decade, his lab at Stanford has been studying how VR can make us better people. Through the power of VR, volunteers at the lab have felt what it is like to be Superman (to see if it makes them more helpful), a cow (to reduce meat consumption), and even a coral (to learn about ocean acidification).

Silly as they might seem, these sorts of VR scenarios could be more effective than the traditional public service ad at making people behave. Afterwards, they waste less paper. They save more money for retirement. They’re nicer to the people around them. And this could have consequences in terms of how we teach and train everyone from cliquey teenagers to high court judges.

Wrinkles and chainsaws

Until recently, studying VR was considered too far-out for academia. But that was never a problem for Bailenson. The professor has a surfer’s mane of blonde hair, but he talks too fast to be a native Californian. (He grew up in upstate New York and spent a decade in the Midwest for school before making it out West.) He clearly relishes his position on the cutting-edge, and is fond of the phrase “for the first time in human history.”

Case in point: avatars. Bailenson says that avatars, people’s representations in the virtual world, now allow humans to watch themselves doing something they’ve never done—“for the first time in human history.” In one [study](#) from Bailenson’s lab, undergraduate students looked into a virtual mirror and saw their own faces, aged to 70, staring back. After the VR experience, they took a questionnaire about allocating \$1,000 from an unexpected windfall.

Another [study](#) put a buzzing joystick in participants’ hands, mimicking a chainsaw as their virtual hands sawed down a tree. Afterwards, when an experimenter pretended to accidentally knock over a glass of water, those who had sawed down a virtual tree reached for 20 percent fewer napkins than those who only read a passage describing a tree being cut down.

Those results are intriguing. But they share a problem common in social sciences research: They draw almost exclusively from the ready, and relatively homogenous, pool of students on campus. Bailenson wants VR to become a real-world tool for increasing empathy, not just a finger on the pulse of the country’s undergrads. So he’s in the middle of his [most ambitious project yet](#)—a study that will track how virtual reality affects empathy in 1,000 diverse volunteers.

“We don’t believe that VR is going to be a one-size-fits-all kind of glove,” says Bailenson. So recruiting volunteers of different ages, backgrounds and ethnicities will be critical to the study. Will VR be most effective for building empathy in

privileged people who haven't personally experienced racism or sexism? In children? In the elderly? The research simply hasn't been done. So he took his lab on the road—outside shopping malls, museums, and libraries—enticing volunteers with taste of VR. His team has now collected data on 400 participants.

The other big question is how long the do-gooder effects last. It's no use teaching people to use fewer napkins if, a week later, they're back to grabbing fistfuls at their local Starbucks. To find out, the study will follow up with a subset of participants six months after their edifying virtual reality experience. Six months is not a particularly long time, but longitudinal studies are entirely missing in the field of VR research. "Nobody knows what happens in the long term," says Mel Slater, a longtime VR researcher at the University of Barcelona and the University College London, surveying the field. "The long-term research is very critical."

Like Uranium

Bailenson believes VR could become so ubiquitous and so absorbing that amidst Stanford's famous startup culture, he has a joke: His free startup idea is airbags for people with their faces stuck in headsets, to cushion their crashes into walls and telephone poles.

The airbag joke also hints at the darker side of virtual reality's immersiveness. "VR is like uranium," Bailenson says. "It can heat homes and it can destroy nations." Anything that has the power to influence our behavior for the better also has the power to influence it for the worse.

A 2009 [study](#) from Bailenson's lab found that placing people in dark-skinned avatars seemed to activate negative stereotypes about black people, rather than reduce them. (Other psychological studies not in VR have found that showing black faces to people may unconsciously prime them to think about racial stereotypes. Bailenson suspects that the technology back then simply wasn't realistic enough, and participants didn't achieve the all-important "presence" to overcome the priming effect.) Indeed, a more recent study from Slater's group that put more emphasis on getting people to identify with their avatars from the onset achieved the opposite outcome.

Bailenson is not alone in discovering that 'improving' people can be tricky. Leaf Van Boven, a social psychologist at the University of Colorado, has found that when people are blindfolded or asked to navigate in a wheelchair, they end up with greater sympathy for people with impaired vision and mobility. But because they only experienced their own fumbling attempts to navigate an unfamiliar condition, they also tended to come away thinking blind and wheelchair-bound people are less able than they actually are. "Depending on your goals," he says, "they may be successful or backfire." Van Boven's studies were not in VR, but they do hint at the complexities of designing simulation-based empathy interventions.

And the question remains whether VR can hold sway after the medium's freshness has worn off. "We're at this slice of time where VR is a relatively novel and fun experience," says Hal E. Hershfield, a collaborator on the retirement savings study who is now a marketing professor at UCLA's Anderson School of Management. "The more they see it all the time, it's possible the less effect there will be. It's the same difficulty for any sort of messaging technique."

The story goes that when the Lumiere brothers first screened their 50-second silent film, *Arrival of a Train at La Ciotat*, in 1896, spectators panicked and tried to run from the incoming train. There's some question of whether that story is entirely true, or whether it's cinema's founding myth. But here in 2016, VR is having its *Arrival of a Train at La Ciotat* moment. What is the medium truly capable of? People like Bailenson are grasping at it, one simulation at a time.