

Virtual superheroes more helpful in real world too

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Having virtual super-powers in a game may incite people to better behavior in the real world, according to research published January 30 in the open access journal *PLOS ONE* by Robin Rosenberg and colleagues from Stanford University's Virtual Human Interaction Lab.

If you give people superpowers, will they use those abilities for good?

Researchers at Stanford recently investigated the subject by giving people the ability of Superman-like flight in the university's Virtual Human Interaction Laboratory (VHIL). While several studies have shown that playing violent videogames can encourage aggressive behavior, the new research suggests that games could be designed to train people to be more empathetic in the real world.

To test this hypothesis, the group – which included Jeremy Bailenson, an associate professor of communication; Robin Rosenberg, a clinical psychologist and author; and Stanford communication student Shawnee Baughman – needed to choose a superhuman ability that could only be simulated in virtual reality, but that people would also subconsciously identify as a "do-gooder" superpower.

"We thought about giving them X-ray vision, but that was a little creepy," said Bailenson, director of the VHIL. "We considered the ability to breathe underwater, but that didn't seem like much of a superpower. In the end, flying like Superman easily registered, and it best leveraged the unique capabilities of the lab."

One at a time, 30 men and 30 women entered the simulator and strapped on a set of goggles that transported them into a digital cityscape. A woman's voice then explained their mission: A diabetic child is stranded somewhere in the city, and you must find him and deliver an insulin injection.

With a whoosh of air, the subjects left the ground – either controlling their flight by a series of arm motions, like Superman, or as a passenger in a helicopter. As they scoured the city, wall-mounted speakers gave the impression of wind whistling by; powerful speakers in the floor produced vibrations to simulate riding in a helicopter. The experiment was set so that two minutes into the simulation, no matter what mode of transport, the subject found the sick child.

After removing the virtual reality goggles, each person then sat with an experimenter to answer a few questions about the experience. This questionnaire, however, was a ruse: During the interview, the experimenter would "accidentally" knock over a cup filled with 15 pens. She would wait five seconds to see if the subject would help her pick them up, and then begin collecting the pens, one pen per second, to give the person another opportunity to come to her aid.

The people who had just flown as Superman were quick to lend a hand, beginning to pick up the pens within three seconds. The helicopter group, however, picked up the first pen, on average, after six seconds (one second after the experimenter began picking them up herself).

The superhero group not only pitched in first, they also picked up about 15 percent more pens on average. While everyone who flew like Superman picked up some pens, six participants who rode in the helicopter failed to offer any help at all.

The pen experiment is a standard test for gauging empathy, and

Bailenson said that the data show that heroic behavior in a virtual environment can transfer to altruistic behavior in the real world. The significance of being able to fly like Superman, however, isn't totally clear.

"We want to have a more precise understanding of why this occurs," he said. "What's more important for encouraging altruistic behavior: being able to fly, or being active in choosing to help?"

The next iteration of the study will allow participants to steer the helicopter to search for the ill child, and will also allow a condition in which the subject experiences flying like Superman, but along a prescribed route.

"It's very clear that if you design games that are violent, peoples' aggressive behavior increases," Bailenson said. "If we can identify the mechanism that encourages empathy, then perhaps we can design technology and video games that people will enjoy and that will successfully promote altruistic behavior in the real world."

More information: Rosenberg RS, Baughman SL, Bailenson JN (2013) Virtual Superheroes: Using Superpowers in Virtual Reality to Encourage Prosocial Behavior. PLoS ONE 8(1): e55003.

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