Changing environmental behavior through virtual reality

By David Matthews, The Guardian, adapted by Newsela staff on 10.06.16
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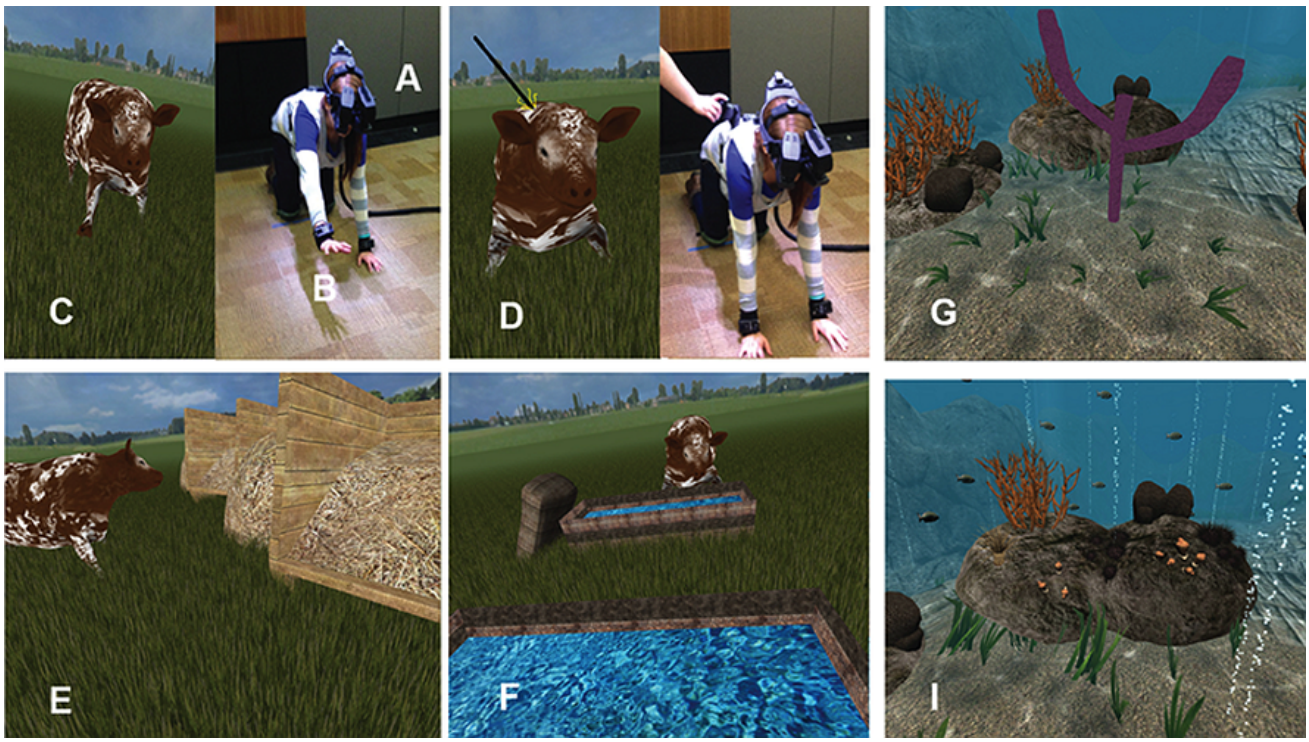

This image shows experiments 1 and 2. Experiment 1 tracked the movements of participants as they and their cow avatar were prodded. Experiment 2's participants saw the effects of ocean acidification in acceleration. Experiencing Nature/Wiley Online Library

Scientists have taken the notion 'you are what you eat' to a new level. Using virtual reality, they are studying how people see the world through the eyes of a cow or a piece of coral to make them feel part of the natural world.

Virtual reality allows users to feel like they are somewhere or something else through the use of three-dimensional screens and other technology. Several consumer virtual reality headsets are now on the market. Researchers hope experiencing life from an animal's point of view could change environmental behavior where other methods have failed.

Watching Your "Body" Corrode

As cows, participants donned virtual reality headsets. They were left to walk around a virtual pasture on all fours. They were jabbed by a virtual cattle prod and told they were to be loaded onto a truck.

As coral, volunteers saw the reef around them decay as the ocean acidified. Their own 'body' corroded, and their branches broke off with a crack.

These immersive experiences led people to feel more connected to nature than those who simply watched the simulation play out on a screen, the study found. The aim of the experiments was to make the distant results of damaging consumption much more real.

"One of the biggest problems with environmental issues is that there's a huge temporal gap," explained study co-author Grace Ahn. "It seems like whatever you do in the present doesn't really connect to the environmental problems in the future." Ahn is an assistant professor of advertising at the University of Georgia.

An Amazing Tool

"Virtual reality is an amazing tool in terms of being able to show you the really solid causal relationships. This is what you do today, and here's what might happen 100 years down the road," she said.

The research is part of an emerging field that uses virtual reality to improve empathy. Ahn co-authored a study in 2013 that explored color-blindness. Volunteers who were given virtual reality headsets that simulated red-green color-blindness spent twice as long helping those with the condition compared to participants who merely imagined it.

"We were quite encouraged by these results and we wanted to take it to the next level," Ahn explained. She said she wanted to see how people responded to the point of view of not just other people but animals, too.

Simulating Touch

One of the unsolved challenges for virtual reality is simulating touch. The goal is to convince users that they truly inhabit their virtual bodies. In Ahn's experiment, some participants were prodded in real life to make being virtually poked with a cattle prod feel more real. Others were bumped by a fishing net as coral.

The study also involved researchers from Stanford University and the University of Connecticut. It was recently published in the Journal of Computer-Mediated Communication. The study does not claim virtual reality produces instant transformations in levels of environmental empathy. It does argue, however, that it could be used as a valuable tool in promoting ecological awareness.

After taking off their headsets, "people said 'that's really cool, I've never thought about it this way'," said Ahn.

A short period as a virtual cow is unlikely to leave someone "reborn into this person who has a thorough interest in environmental issues," she acknowledged. Longer-term exposure, however — perhaps during school — could be "a lot more effective."

Ahn added that she believes virtual reality can increase and improve the qualities you already have.

Quiz

1 Which section highlights the idea that other virtual reality experiments have been done in the past?

(A) Introduction [paragraphs 1-2]

(B) "Watching Your Body Corrode"

(C) "An Amazing Tool"

(D) "Simulating Touch"

2 Select the paragraph from the section "Simulating Touch" that explains how researchers tried to overcome an obstacle of the study.

3 Which of the following BEST explains the author's purpose in including the section "Watching Your Body Corrode"?

(A) to explain how experiencing life as cows and coral made participants feel more connected to environmental issues

(B) to show that these studies are the first time scientists have attempted to change environmental behavior

(C) to emphasize that people don't know that the environment is damaged by consumption and other human choices

(D) to describe how the virtual reality experiments changed participants' attitudes and behaviors regarding recycling and energy use

4 Read the paragraph from the section "Simulating Touch."

> *A short period as a virtual cow is unlikely to leave someone "reborn into this person who has a thorough interest in environmental issues," she acknowledged. Longer-term exposure, however — perhaps during school — could be "a lot more effective."*

Which of the following BEST identifies how this paragraph develops the MAIN idea of the article?

(A) It highlights that long-term exposure to virtual reality is a challenging goal.

(B) It highlights that schools are the appropriate place for exposing students to virtual reality projects.

(C) It highlights that even short virtual reality experiences can generate interest in environmental issues.

(D) It highlights that increased exposure to virtual reality can more effectively promote empathy.