Building Empathy and Decreasing Bias Using Virtual Reality

THE OVERVIEW

Decades of social science research has shown that people behave better towards those they see as like them, while displaying less empathy toward those they see as different. This sense of "otherness" can be driven by race, nationality, gender, or other innate traits, though biased behavior also appears when people are on different "sides" simply because of their roles: doctor and patient, officer and citizen, or even members of different, randomly assigned teams. These "my team" vs. "your team" biases aren't permanent: they can be shifted by encouraging people to redefine who counts as "other." And biased behavior can be decreased by helping people think empathetically about the "other" they're interacting with.

But how do we shift biased behavior in the long term? Simply telling people to treat those they see as "others" in a better way can sometimes backfire, causing the biased person to repress or hide their attitudes instead of changing them. These attitudes then remain, waiting to subtly influence behavior or become fully activated in stressful situations where they can no longer be suppressed. Instead, research suggests that allowing people to participate in experiences where they positively interact with (or even step into the shoes of) members of the group they are biased toward may be more effective. These kinds of experiences can help a biased person to see members of a stereotyped group as unique individuals and cause them to feel feelings of similarity with them. This is a less explicit, but likely more effective way of building empathy and increasing helpful behavior that doesn't elicit defensive reactions.

Virtual reality interventions are uniquely effective at creating these kinds of immersive perspective-taking experiences. In an ideal situation, a biased person would "step into the shoes" of the type of person they display biased behavior toward, which would both build empathy for members of that group and create a feeling of being "not so different" after all. This isn't possible in the real world, but easily accomplished in virtual reality, where users can inhabit digital bodies that look nothing like them and interact with digital worlds that are wildly different from their own. Extensive academic research has demonstrated that these virtual perspective-taking activities not only decrease negative attitudes toward stigmatized groups, they also cause people to be more helpful to those they've taken the perspective of. VR interventions tackle the root of the problem (perceiving members of the stigmatized group as "other") and improve specific interactions and outcomes (by increasing positive feelings).

THE CHALLENGE

People in critical roles behave according to unstated biases, though this behavior can be altered by encouraging empathetic thinking and taking the other's perspective.

• Black patients are systematically under-treated for pain compared to white patients, though empathy exercises even out treatment recommendations.[1]

    • In one study, nurses and undergraduate students were asked to make care recommendations for identical white and black patients. Both groups consistently recommended less pain treatment and expressed less empathy for black patients. When care providers were instructed to empathetically imagine how the patient was feeling and how the pain affected them, however, black and white patients received closer to equal recommendations for treatment, reducing the bias of recommendations by 65% or more.

• Medical students express much more empathy for patients after experiencing a medical examination from the patient's perspective in virtual reality.[2]

1   Drwecki (2010)
2   Andrew Raij, Virtual experiences for social perspective taking, University of Florida

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• In another study, medical students were asked to give an examination to a virtual patient, then were placed in the perspective of that patient and relived their own examination from the patient's perspective. 100% said that they had a better understanding of the patient's feelings afterwards, and 83% said they expected to be more empathetic toward patients in further examinations.

Biased attitudes reveal themselves and worsen under stressful and distracted conditions.

• Even when those inhabiting critical roles are trained to overcome their biased reactions, the positive effect of direct, rational training disappears under stress.[3]

• A series of experiments on shooter bias demonstrated that police officers who were trained to be aware of racial stereotyping and not make gut decisions made unbiased shooting decisions when they could focus fully on the task at hand (a firing practice exercise). When they were distracted by lots of stressful stimuli, however, they made shooting decisions that were just as racially biased as those of completely untrained civilians.

When biases are deep rooted or individuals are unaware of their biases or won't admit them to others, experiential methods are likely to be more effective than direct "training."

• Many social scientists believe that racial categorizing (or "encoding") is an automatic cognitive process that can't be affected without being "disproved" as a way to predict group membership. Presenting an alternative world in which race is not predictive of group membership quickly diminishes the biased categorization methods people typically use.[4]

• In as little as four minutes, researchers were able to lessen the amount that participants use race to predict group membership. They accomplished this by using a memory task where participants had to recall which photographs of people of different races belonged to different teams. While they first made classifications that were heavily influenced by race, after being repeatedly exposed to iterations of this exercise, people "learned" not to categorize people into different teams based on race when there was more accurate information available for them.

THE POWER OF POSITIVE IMAGINATION

"Positive imagination" decreases (and in some cases can even remove) the stress and anxiety people experience before interactions with stigmatized groups.

• Imagination can creative positive feelings around contact with stigmatized groups when imagining negative experiences is immediately followed by imagining positive ones.[5]

• One study used experiments to examine responses to stigmatized minority groups (adults with schizophrenia, gay men, and Muslims). The findings show that when an individual first imagines a negative encounter with a group, and then is asked to imagine a positive encounter, anxiety about future encounters with that group is significantly reduced. Intentions to make contact with that group in the future were also significantly higher.

• Even for those who are especially anxious about coming into contact with stigmatized groups, imagining the interaction significantly diminishes anxiety about it.[6]

• In another study, participants were asked to imagine contact with a stigmatized group, and researchers discovered that the effect of this imaginative exercise completely counteracted the anxiety they felt about interacting with that group.

3 Joshua Correll et al, University of Colorado Bouler (2014), "The Police Officer's Dilemma: A Decade of Research on Racial Bias in the Decision to Shoot"
4 Kurzban, Robert, Tooby, John, and Cosmides, Leda. "Can Race be erased? Coalitional computation and social categorization." Center for Evolutionary Psychology, University of California, Santa Barbara.
5 Birtel, M. D., & Crisp, R. J. (2012b). "Treating" Prejudice: An Exposure-Therapy Approach to Reducing Negative Reactions Toward Stigmatized Groups. Psychological Science.
6 Birtel, M. D., & Crisp, R. J. (2012a). Imagining intergroup contact is more cognitively difficult for people higher in intergroup anxiety but this does not detract from its effectiveness. Group Processes & Intergroup Relations,

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THE VIRTUAL REALITY PERSPECTIVE-TAKING SOLUTION

Taking the perspective of a stigmatized group member in virtual reality leads to increased positive feelings toward that group, better negotiation outcomes, and more helpful behavior.

• Experiencing what it's like to live as a member of a stigmatized group in virtual reality leads to more helpful behavior toward that group outside of VR.[7]

   • In one experiment, students who were able to experience red-green colorblindness in virtual reality were more helpful to a student who posed as a colorblind person, staying behind to help them twice as long and twice as much as students who were merely asked to imagine being colorblind while they participated in the same task.

• Virtual perspective-taking leads to more equitable negotiation outcomes.[8]

   • In one study, users took on the role of a golf course owner negotiating with a local park ranger about expansions to his golf course. Participants who were able to embody the park ranger's perspective in virtual reality and were educated about his needs had the highest perception of their relationship with him, and reported the highest feelings of similarity and motivation to cooperate. Similarly, the most "cooperative" (or even) outcome of the negotiation emerged from this group, indicating that both parties to a negotiation or conflict will be more satisfied with getting less of what they want when empathy and perspective-taking are employed.

• Mimicking members of a stigmatized group in a controlled environment can increase empathy toward and decrease systematic bias against people of that group.[9]

   • In one study, researchers facilitated a virtual conversation between 60 Jewish Israeli participants and a virtual Palestinian. The group of Jewish Israelis who were asked to mimic the body movements of the virtual Palestinian (instead of merely speaking to them) in virtual reality developed stronger empathy towards Palestinians, regardless of their prior perspectives.

• When light-skinned people inhabit the body of a dark-skinned avatar in virtual reality, they display less racially biased implicit associations.[10]

   • After a ten minute exercise in which light-skinned people were able to view their movements as a dark-skinned person in virtual reality, they displayed significantly

Virtual reality provides a safe, engaging environment where individuals can either 1) take the perspective of or 2) "practice" having positive interactions with members of a stigmatized group. Both of these types of activities have a significant, positive effect on attitudes, behavior, and levels of anxiety around future interactions with members of that group.

THE CONCLUSION

In short, empathy-building VR interventions can…
• Increase feelings of empathy toward those in stigmatized groups
• Inspire more helpful behavior toward those in stigmatized groups
• Increase motivation for more empathetic and caring future behavior toward those in stigmatized groups
• Lead to more equitable negotiation outcomes between two different parties
• Decrease negative implicit racial biases
• Decrease anxiety around the thought of interaction with members of stigmatized groups
• Increase feelings of willingness to engage with members of stigmatized groups

7 Ahn, S. J. (Grace), Le, A. M. T., & Bailenson, J. (2013). The Effect of Embodied Experiences on Self- Other Merging, Attitude, and Helping Behavior. Media Psychology, 16(1), 7–38.
8 Hunter Gelbach, Jeremy N. Bailenson et al (2015), Harvard Graduate School of Education, "Many ways to walk a mile in another's moccasins: Types of social perspective taking and its effect on negotiation outcomes"
9 Peacemakers: Mimicry Increases Empathy in Simulated Contact with Virtual Outgroup Members. Cyberpsychology, Behavior, and Social Networking
10 Tabitcha C. Peck, Mel Slater, etc al. "Putting Yourself in the Skin of a Black Avatar Reduces Implicit Racial Bias" University of Barcelona.

APPLIEDVR EMPATHY   **03**