Erick Jose Ramirez, *The Ethics of Virtual and Augmented Reality: Building Worlds,* (New York: Routledge, 2022), 208 pages. ISBN: 978-0-367-48626-6 (hbk.). Hardback: $128.

This is a significant contribution to the philosophy and ethics of technology, focused on the philosophical import of virtual and augmented reality. The author deals with technologies that now have uses in entertainment, education, and business. Ramirez should be credited for breaking new ground by writing a book that deals with current and future developments in technology.

The author sets out the distinction between virtual reality and augmented reality in terms of simulated content. Each involves immersive, interactive experiences through use of simulations. The difference, Ramirez notes, between VR and AR is that the former involves more simulated content in the experience than the latter. AR involves a higher degree of real-world content than VR. While the title of the book distinguishes VR from AR, ultimately Ramirez thinks that the distinction between the two does not amount to much.

What does matter, according to Ramirez, is that there is a class of "virtually real experiences," and these are experiences that can only be provided by the relevant sort of VR or AR technology. In the author's view, merely reading a book or watching a movie can't give you the same kind of experience. It is due to these experiences, Ramirez claims, that the philosophical and ethical issues he engages with arise.

In addition to being a book that contributes to the literature on philosophy, ethics, and technology, this is a book with a strong focus on moral psychology, as the author gives great attention to the topics of empathy and sympathy. There is also a substantial amount of discussion of empirical research on the psychology of virtual reality more broadly.

Ramirez opens the book with a useful introductory chapter detailing some major concepts and indicating what is to come later in the book. The second chapter of the book, "Imagination and the Limits of Empathy," reads like an independent article on the topics of imagination, thought experiments, and empathy. Ramirez criticizes the use of what he calls the Thought Experiment Paradigm in moral psychology. This is the use of thought experiments like trolley problems or Henry Shue's ticking time bomb case to investigate ordinary moral judgments. These are widely used, for example, to investigate whether people tend to have consequentialist or deontological attitudes.

What Ramirez finds most concerning about the Thought Experiment Paradigm is that such experiments cannot put the test subject "in the shoes" of the person deciding whether to pull the lever in the trolley case, or of the person who would torture the nuclear terrorist in Shue's ticking time bomb scenario. Ramirez cites empirical work showing that individuals do not do well at predicting what we might do in a certain scenario. Empirical work also demonstrates the failure of people to recall what they felt in past scenarios. This might perhaps be related to what how well we can feel what one might feel in the thought experiment situations.

The main argument Ramirez employs against the Thought Experiment Paradigm has to do with the non-conscious, subdoxastic elements of experience. Ramirez refers to work suggesting that non-conscious elements of experience like unconscious emotions shape the judgments we make about the world and other people. When we try to judge what we might do when faced with whether to divert a trolley headed towards five people on the track, we are engaged in a kind of thinking, but we lack the subdoxastic elements of our experience that might be present were we, very unfortunately, in an actual world trolley scenario. We do not really feel

what we ourselves might feel in a trolley scenario when we are answering questions in a moral psychology lab.

Ramirez contends that as a result of the failure to truly capture empathy in thought experiments, the Thought Experiment Paradigm fails—testing subjects regarding their judgments on thought experiments does not settle matters about the nature of morality or moral psychology. This is a strong claim indeed, at odds with quite a bit of recent research on moral psychology.

At the end of the chapter, Ramirez returns to VR to suggest VR might be a better approach to testing moral judgment. He later supports this suggestion with research on virtual reality exposure therapies that have been used to treat issues such as phobias and PTSD. These uses of VR in therapy have shown some success in giving patients a lower degree of exposure to scenarios that can produce symptoms like anxiety. Drawing on these results, this he suggests some VR simulations might lead individuals to the actual reactions they would have in the scenarios presented in traditional thought experiments.

In the third chapter, "When Being There is Not Enough," Ramirez critically discusses the phenomenon of "presence," the feeling of being located in a virtual environment. He distinguishes ways of analyzing presence, noting the importance of the feeling that one is acting, exhibiting a kind of virtual agency, in a simulated world. Going beyond the notion of presence, Ramirez, as noted above, claims that AR and VR can create "virtually real experiences," experiences as if the simulated worlds are real. This can happen, for example, when a person is so immersed in a VR game that he or she accidentally bumps into something real and is surprised by incursion of the actual world. Ramirez contends that the extent to which someone can have a virtually real experience depends on his or her psychology. People with more dissociative tendencies, defined by Ramirez as tendencies to feel disentangled from one's own experiences, may be more susceptible to virtually real experiences. Ramirez himself admits that this is a tenuous claim, given the limited existing research on virtual reality, psychology, and experience.

Chapter Four, "Virtual Experience, Real Harm," explores harms that may occur as a result of experimentation in VR and AR. He opens with a discussion of Stanley Milgram's infamous psychological experiments. Ramirez notes the potential harms to the subjects in these experiments, subjects who thought that they were administering electric shocks to others, as commanded by the experimenters. IRB Boards would not allow such experiments today. Despite the hope of some researchers that VR might avoid creating harm to subjects in experiments, Ramirez makes the case that experimentation that poses risks to its subjects in a virtual environment should be prevented just the same as experimentation that poses real risks in the actual world.

VR Milgram-style experiments would, Ramirez argues, be no more ethical than the original real-life version. This leads to limits on the kind of VR experiments Ramirez would like researchers to use in place of the aforementioned Thought Experiment Paradigm. This might, as Ramirez suggests, rule out use of VR in place of the rather gory trolley scenarios. One might wonder at this point about whether VR can usefully take the place of thought experiments in moral psychology. Are the limits Ramirez sets out too restrictive to allow useful experimentation?

The fifth chapter, "Why It's Unethical to Use VR and AR as 'Empathy' Machines," Ramirez returns to the issue of empathy. Ramirez discusses VR and AR programs that were meant to increase empathy with someone who is dealing with difficult scenarios. These programs simulate the circumstances of a person who is contending with issues such as racism or homelessness. These VR and AR simulations seem well-intentioned as attempts to put someone

who has never dealt with these issues in the shoes of someone who has. Ramirez claims that these programs are a misuse of technology. Based on his view of empathy, he claims that the programs cannot actually provide a person with the relevant experiences. Furthermore, he thinks these programs are manipulative in an unethical way. He suggests that trying to use VR to induce sympathy rather than empathy might be less morally troublesome.

Chapter six contains a very thorough and detailed code of ethics for VR and AR, drawing on his previously argued claims as well as the codes of ethics of organizations such as IEEE and ACM. Finally, in the last chapter, "AR and the Future of Selves," Ramirez considers the potential impacts of wide-spread applications of AR in the future.

Ramirez's writing is clear and to the point, and much of his argumentation is sharp. Ramirez makes some claims that, as noted above, he himself regards as tenuous. Some of this is due to the limitations of existing research on the philosophy and psychology of VR. He pursues philosophical and psychological issues in VR and AR quite thoroughly despite the limited resources available.

This is an important book that should be of interest to readers interested in the philosophical and ethical ramifications of developments in virtual and augmented reality. It will also be highly relevant to researchers interested in moral psychology and the psychology of VR and AR.

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