The Use of Virtual Reality in Teaching Moral Philosophy

**Introduction**

This project uses the classic philosophical thought experiment known almost universally as the Trolley Problem to test the hypothesis that virtual reality offers a potential leaning gain in the teaching of Moral Philosophy. It has been noted that teaching ethics has little effect on people’s actual decision making. This may be thought of as a specific example of a wider problem in the teaching of humanities. This wider problem is that, though we point to the transferable skills that can be acquired through the study of the humanities, there is little empirical evidence to support this claim, and even some evidence that suggests it is not true. A possible explanation of this lack of learning outcome could be that the teaching and learning that occurs in university study of humanities is surface rather than deep learning. Students can apply a critical faculty in the subject but fail to apply the skill in other areas of life or thought. Perhaps because the methods we use to teach do not engage the whole person. One example of this is Moral Philosophy. We teach ethical decision making as a rational process, but it may well be that ethical decisions as much a matter of intuitions which like the intellect and reasoning capacity can be trained and developed.

The classic trolley problem sets up a dilemma between acting to save 5 people at the cost of one life through either action or inaction. In philosophical terms it brings into tension utilitarian and deontological moral decision making. In the first iteration of the dilemma, where participants can switch a runaway trolley to an alternative track, which results in the death of one person, but the lives of 5 people saved, the death of the virtual person is a secondary result of the participant’s decision to save 5 lives. It is easier to justify the decision. In the second iteration, participant is standing on a bridge and could stop the trolley and save five people, but only by pushing a virtual person off the bridge. This action is much more difficult for an individual to justify, even though the actual outcome of 1 death and 5 lives saved is identical to iteration 1, because the participant is the direct cause of the virtual person's death. There is a second philosophical principle here: that of unintended consequences.

We have extended the dilemma in our scenario to take account of the moral arguments of Peter Singer about 'moral speciesism.' Singer, who is a utilitarian moral philosopher has for many years argued that human moral decision making unfairly favours the human species over other sentient animal. In our virtual scenario, we created an option where people are presented with the choice not between 1 person or 5 people but between human beings and penguins.

**Results**

After the construction of the virtual scenario, the first task was to test the reactions and decisions of participants to the dilemma's they were confronted with and compare these to the results of more conventional studies in which participants are asked to report what they think they would do in the situation. The percentage of participants making particular choices is shown in table 1

|  |  |  |
| --- | --- | --- |
|  | Switch Track | Bridge |
|  | Save 5 | Save 1 | Save 5 | Save 1 |
| VR Study | 87 | 13 | 33 | 67 |
| Self-Report | 85 | 15 | 15 | 85 |

Table 1 Comparison of self-reports and VR actual reactions in the Classic Trolley Problem

Table 2 Shows the Preferences in the two scenarios of participants making the choice to save people or penguins. Again, the reported figures are percentage figures. There is no comparison in the table to self-report figures, since there are no studies yet available for comparison.

|  |  |  |
| --- | --- | --- |
|  | **Switch Track** | **Bridge** |
|  | Save Penguin | Save People | Save Penguin | Save People |
| **VR Study** | 20 | 80 | 20 | 80 |

Table 2 Human/ non-human moral preference.

We also have data (Table 3) on the gender preference of participants, which shows a significant bias towards saving female rather than male virtual persons. Again, we have no comparison with self-report studies.

|  |  |  |
| --- | --- | --- |
|  | **Switch Track** | **Bridge** |
|  | Save Female | Save Male | Save Female | Save Male |
| **VR Study** | 77 | 23 | 60 | 40 |

Table 3 Gender Preferences of participants in the VR study

**Discussion**

Studies using VR in moral decision-making have so far concentrated on the accuracy of the responses in the simulations by measuring emotional responses, for example skin conductivity. (Bronack et al., 2008; Slater et al., 2006) These studies suggest that people do indeed respond, emotionally and physiologically, in the virtual world as though they were confronted with the dilemma in the real world. This makes our initial results interesting for they show a divergence from self-reported behaviour in the case of the bridge scenario. In the virtual world 33% of our participants chose to push a single individual off the bridge in order to save the five. Our participants were all young people with varying degrees of interest and experience of computer gaming and VR and it is possible that the scenario was viewed as a game with no real-world consequences. This would perhaps either free participants to experiment with different responses or simply to behave in a contrary manor to their normal moral mind set. Such ‘confounds’ are certainly possible, however, debriefing participants after the experiments suggests that this is not what was happening. Rather than a deliberate conscious act to see how acting contrary to their own perceived moral framework or deliberately treating the scenario as simply a game, participants reported that when confronted with the bridge scenario, they just felt they had to do something and act. This is also supported by the correlation we found between behaviour in the virtual world and an initial moral personality test. This correlation suggests the conservation of moral personality in the virtual world. It seems reasonable to think that people are behaving in the virtual world in a way that they intuitively feel is morally consistent and that this behaviour is a very close analogue to the way they behave in the real world.

The shift in results in the bridge scenario is a philosophically interesting datum for it suggests that in the moment of decision making, people are acting not rationally but intuitively. There is a long term, historical debate within moral philosophy regarding the role of sentiment or intuition on the one hand and reason and rationality on the other in moral decision making. The traditional approach to discussing moral decision making with students relies on the use of the imagination and ability to think how one might respond or calculate in a particular dilemma. The focus is on acting in a justifiable way which a student can defend. The VR scenario has exposed the fact that people do not always act in the way they think they would. Thus, the question in a seminar becomes not ‘what would or should you do in this situation’ but ‘why did you act in this particular way?’ It has been reported that the teaching of ethics has little impact upon people’s moral decision making. It could well be that this is because conventional teaching methods fail to get to the heart of student’s real moral decision-making processes. Learning is thus surface rather than transforming. Criticisms of the use of VR for teaching purposes have focused on the lack of learning gains in the use of the technology (Dalgarno, B. & Lee, M. 2010). Here our preliminary results suggest that there may well be a significant learning gain; if it is really the case that using VR gives us access to what we would really do in a situation rather than what we think is either morally right or what we think others will think acceptable. We avoid self-editing and illusion in other words.

The results of the penguin variation are interesting in that they suggest that a person’s ‘moral personality’ is conserved in the virtual world. People consistently favour penguins or people and when debriefed offer reasons for their choices. This conservation of moral personality is consistent with the findings of earlier studies that people respond in the virtual world in the same way that they would in the real world and thus significantly supports the idea that VR is a valid tool in both teaching and research. This conclusion may be compromised slightly by the differences found in gender preference in the switch and bridge scenarios, but this difference may be explained by other factors, for example the distinction between direct and non-direct consequences of an action mentioned above. It may well be the case that this is a much more significant factor when deciding between two human beings rather than between a human and non-human.

**Conclusions and Next Steps**

The study was always intended as a pilot study for a much larger and long-term project to test the viability and usefulness of VR techniques in teaching a theoretical subject. The results are encouraging in that they do suggest that there is significant potential learning gain in the use of the technology, as discussed above.

The project set out to explore a novel way of using digital technology to reveal moral intuitions in a ‘safe environment,’ and sought to answer the following questions:

1. Can VR be used in the classroom to simulate moral dilemmas?
2. Do students respond differently to the same dilemma when it presented as a VR game compared to a described thought experiment?
3. Does the use of VR help students to embed moral decision making in their everyday practice?

The results give affirmative answers to questions 1 and 2. VR is a viable classroom tool in the simulation of moral dilemmas and there is evidence that students behave differently in the virtual world to the way they report and think they would behave if confronted with the same dilemma in a traditional seminar introducing the dilemma as a thought experiment. This difference however is consistent with the participant's moral personality which is conserved in the virtual world and is pedagogically significant. We have not begun to address question 3. This will require significant follow-up of participants and a more longitudinal study than we have been able to conduct in one year.

We intend now to use our current system in real teaching of moral philosophy in the Philosophy BA programme in 2018-19. We are also putting together a bid for a much larger research project examining the idea of moral personality and how this may be affected in the virtual world. This project will be multi-disciplinary involving Philosophy, Computer Science, Psychology and Neuroscience.

Mark Hocknull, Chris Headleand and Tom Smith

**References**

Bronack, S., Sanders, R., Cheney, A., Reidl, R., Tashner, J. & Matzan, N. (2008). Presence pedagogy: teaching and learning in 3-D immersive environments. International Journal of Teaching and Learning in Higher Education, 20, 59–69.

Dalgarno, B. & Lee, M. (2010). What are the learning affordances of 3-D virtual environments? British Journal of Educational Technology, 41, 10–32.

Slater, M., Antley, A., Davison,A., Swapp, D,. Guger, C., Barker,C., Pistrang, N., Sanchez-Vives, M.V., 2006 A virtual Reprise of the Stanley Milgram Obedience Experiments PLosONE <http://onlinelibrary.wiley.com/doi/10.1111/bjet.12135/full>