The Jacobs Center Research Seminar Series

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The Potential of Virtual Reality for Social Science Research: Three Examples from Criminology

The use of virtual reality (VR) in social science research dates back at least two decades but for a long time remained the exclusive domain of a handful of large research labs that had both the funding and technical expertise to experiment with it. Since then the use of VR technology has seen a steady increase. Given recent developments that have greatly enhanced realism, reduced costs, and increased possibilities for application, VR may be well on its way to become a staple research method for social scientists. In this talk, I discuss the potential of VR to study social phenomena using examples from my own research on criminal and delinquent behavior. The first example regards the use of VR as a means to study phenomena that due to their, in this case illegal, nature can rarely be studied in a systematic fashion in the real world. In this study (Van Gelder et al., 2016), we were interested in understanding residential burglary. For this purpose a virtual neighborhood was developed in which houses could be burglarized by participants. By realistically mimicking a real-world situation in VR while maintaining experimental control, we are able to study the burglary event as it actually unfolds. The second example serves to illustrate how VR offers new possibilities to generate situations that are technically hard, if not impossible, to create with other methods. To tackle the problem of juvenile shortsightedness and its relation with delinquency, this study used special software to create aged visual analogs, 'avatars', of participants in order to have them 'meet' their future self in VR (Van Gelder, Hershfield and Nordgren, 2013). Participants walked around in a virtual room and were confronted with their future self when looking into a virtual mirror hanging on one of its walls. Subsequently, they had the chance to steal money in the real world. Those who had just stared at their future self in the mirror were less likely to steal compared to controls who had seen their regular self-reflected. The third illustration regards the comparison of 'traditional' written scenarios with their virtual reality equivalents in the context of interpersonal aggression. Participant responses on a written scenario depicting a conflict between two people in a bar were compared with responses to the same situation in virtual reality. That is, instead of reading about the situation and asking people to imagine themselves to be in it, they were actually immersed in the conflict in VR. Together these illustrations serve to show that VR can provide an ecologically valid alternative for traditional methods, create research possibilities that are hard to realize otherwise, and allows for the study of phenomena that are difficult to study in the real world for either ethical, budgetary or practical reasons

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Individual meetings with Dr. Jean-Louis van Gelder are available,
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