

The impact of identification with an avatar on behavior in economics and strategic decision-making: application of Experimental Economics within Virtual Reality

Doctoral School: Doctoral School in Law, Political Science, Economics and Management (ED DESPEG)

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Subject description:

Introduction

Virtual Reality (VR) technology appeared decades ago [1], but, until very recently, it has not been affordable out of military and research centers. With the development of more powerful, affordable, and sophisticated softwares and toolsets, a rapidly increasing number of people can now experience the computer-generated 3D environment. With VR pushing the limits of immersion, metaverse worlds are developing and reshaping the way we communicate and interact with each other. They allow us to live a second life where we will be able to re-invent ourselves and create virtual identities translated into our avatars.

State of the Art

This research project builds upon the several publications in the field of computer science, studying the connection of human subjects with an avatar. Between the many, in [2], the authors have assessed the effectiveness of different VR systems and how inserting a self-representation (i.e., the avatar) can affect the “*sense of presence and interaction in virtual environments*”. In [3], the authors concluded that personalized avatars have a positive impact on the feeling of body ownership and presence vs. a generic scanned version of themselves, as does the degree of immersion. Instead, scientific contributions on the effect of VR technology on economic behavior are still scarce. In [4], the authors study the similarities and differences of performing economic experiments in virtual worlds vs. physical worlds. In [5], instead, the author explores the question of behavior in a virtual world and provides a “*valuable source of empirical evidence for economists*” by making a review of existing research on the application of VR in the field of experimental economics.

Project description

In this project, we aim at merging these two literatures, by studying how VR immersion and the physical connection with an avatar affects individuals' economic decision-making process. In a VR world, in fact, individuals can take any form they like, creating an avatar differentiating from their human real-world appearance, and having the possibility to create the version of themselves they have dreamed of. This could provoke distortions on behavior and on decision-making. Metaverse worlds will be used to copy everyday life activities, differentiating from games where individuals are more inclined to understand that it is just a play. The aim of this project is to study how the identification with an avatar in VR and choosing a different appearance than the real self will affect economic decision-making. Will individuals connect with their avatar on a level where they will take actions adapted to its identity instead of their existing human form? And how will the effectiveness of the VR setup influence such association?

The question of identification with avatars in a VR environment and how it affects human decisions can be explored on several levels. First, the avatars will allow individuals to enter the virtual world where they will perform daily activities in a human-like appearance of their choice by going beyond the limitations of the physical world in which they exist. Research in experimental economics has provided us with evidence showing differences in behavior based on physical factors such as gender and age among others. We can presume that people feeling a close relation to their avatar will start behaving more as the avatar personifying them. Second, avatars in the Metaverse will also take forms that do not resemble humans and are having a more unrealistic appearance. It is of interest to explore if having a less human-like avatar would make individuals less altruistic or less emphatic, or less likely to cooperate in a cooperative environment. Third, the excellence of the technology can provide a further feeling of immersion in the virtual world and therefore allow individuals to feel more connected with their avatar. It is interesting to find if the identification with the avatar is stronger when the performance of the devices allows a better fusion of the real-world motions with the virtual personality's movements even if the avatar itself does not have similar characteristics to the physical self.

Methodology

In this project, the student will perform laboratory experiments at LEEN (Laboratoire d'Économie Expérimentale de Nice, CNRS, GREDEG) and at CoCoLab (Complexity and Cognition Lab, MSHS). To implement VR immersion, the research project is in collaboration with the Department of Informatics, Bioengineering, Robotics, and Systems Engineering (DIBRIS) of University of Genoa, Italy.

References

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