

Can phenomenology help describe the experience of presence, embodiment and identity within virtual reality?

Abstract

Virtual reality (VR) is typically defined as computer-generated or assisted three-dimensional environments that create an experience of immersion, allow user-interaction and are set apart from the real world in some way. These images can be displayed on screens, projected onto walls or experienced through head-mounted displays with increasing degrees of immersion.

Accounts by users of virtual reality often fall short in their ability to describe the experience. The greater immersion and interaction that are possible within VR confer a reality to the experience which is at odds with the inherent unreality of the medium as it is set apart from physical reality.

The literature of phenomenology (that is, the philosophy of the lived experience of individuals) aims to define the building blocks of what this sense-making of the world around us is built from. This study aims to use these concepts, and rebuild a phenomenology of the lived experience of virtual reality, to develop a language and framework for describing the essential elements of the experience of virtual reality and so enable better analyses of interacting and learning within these spaces.

Keywords: virtual reality, phenomenology, philosophy, postphenomenology, presence, embodiment

Why this short paper?

This short paper shares the approach I'm taking to developing an understanding of the experience of learners in VR. I'm hoping that by exploring the philosophy of phenomenology, which deconstructs the various elements of how we experience the world, this will enable me to build something similar from first principles with the experience of VR. Some authors have already attempted this. I'm

planning to build on their work, and incorporate more ideas from the literature, specifically from people who have worked extensively in VR. The following is an edited version of the work so far.

The goal of sharing it is to elicit feedback on:

- Is this an approach which journal readers think may prove useful?
- Are there recommendations as to how this could be developed effectively?

Introduction

There are numerous definitions of virtual reality (Kardong-Edgren et al, 2019) but the commonality between these definitions is that VR:

- Is computer-generated, computer-assisted, or computer-based
- Is a three-dimensional environment that generates an immersion effect
- Enables the experience of auditory and visual stimuli
- Allows the user to interact with and manipulate the environment

Kardong-Edgren et al also cite the additional potential criterion that it can be experienced through specialised ear- and eyewear, usually referred to as a head-mounted display (HMD). The distinction between computer-generated and computer-assisted is that the former presupposes computer generated imagery within a 3D world (a virtual world), whereas computer-assisted also includes video-based virtual reality (VBVR [Chang et al, 2020]), in which users can interact with 360-degree images. Kardong-Edgren et al define screen-based VR as low-immersion, wall-projected VR as medium-immersion and HMD VR as high-immersion (2019).

Virtual reality as a term was first coined by Antoine Artaud (1958; 49) in recognition of the theatre being “purely fictitious and illusory world” which acts as a double for the real world. Michael Saler identifies precursors to this idea of the doubling of the real world within a secondary world in fiction dating back to the nineteenth century. These fictional worlds are not only immersive (in the same way that we can become lost in any story) but are interactive, in that they are co-created; what one author writes augments this parallel world which then changes for others creating in this space (2012; 131).

The term “virtual reality” therefore in itself only conveys a space that is interactive, immersive and stands apart from everyday reality. Beyond that it is necessary for authors to specify the boundaries by which they define the concept (Kardong-Edgren et al, 2019).

For the purposes of this discussion, the examples are drawn from experiences of using two specific immersive technologies, screen-based and head-mounted displays of computer-generated environments (virtual worlds) and head-mounted displays of 360 videos (VBVR).

The starting point for this study is a paper by Brown, Childs and Youdale (2025) in which the authors conducted a study of users' experience of VBVR and observed that the reflections were limited by an epistemic failure (Floridi, 2005) due to the novelty of the experience.

We have discussed the issue of linguistic precision being an unanticipated but unavoidable flaw. The participants (and researchers) struggled to articulate impressions of embodied VR specific to 360-video (previous studies focus on) the technologies delivering the experience, not how it feels to be part of it.

The conclusion of the Brown et al study was that a new phenomenological approach to describe the experiences is needed, an observation which had earlier been made by Geniusas where he stated:

the stimuli generated by digital technology provoke a type of immersion that is fundamentally unlike other forms of immersion, so much so that we are in need of a new concept to qualify this experience. Clearly, if there is such a basis, it must be clarified experientially, with attention directed at phenomenal differences. Yet this kind of purely experiential clarification is nowhere to be found. (Genusas 2022; 4-5)

The aim therefore in the following discussion is to provide this experiential clarification. The steps through this process will be

- 1) Identify key papers which explore the phenomenal differences between physical and virtual reality and relate these to the literature on virtual reality
- 2) Review phenomenal concepts and how these may additionally clarify experiences of virtual reality

The overall intention is to develop a framework to define the separate elements of a phenomenal experience of virtual reality to address the issues around articulation of these experiences.

Areas to be explored through the literature on phenomenology are:

Immersion as a world apart

Alfred Schutz referred to the multiplicity of spaces in which we can inhabit as "finite provinces of meaning" (FPsM). These FPsM are bracketed (Schutz uses the term *epoché*) as distinct separate

spaces, drawing on William James's concept of sub-universes; e.g. the universe that is conveyed by our physical senses, by our scientific understanding, of various supernatural worlds, the worlds of opinion etc (Geniusas, 2019; 7). This epoché is a common part of human experience, what virtual reality technology provides us with is a *perceptual* bracketing in unison with Schutz's epoché of meaning. The Finite Province of Meaning co-exists with a finite province of computer-generated space, sound and objects.

Immersion as displacement

However, for this world to take over, the actual world has to be displaced. "Immersion thereby marks the individual's capacity to substitute non-actuality for actuality (Geniusas, 2019; 6) it "rests on the shoulders of the suspension of the practical outlook, which otherwise characterizes our basic everyday experience." (ibid).

Immersion as a doubling of location

Artaud described theatre as a double and actors as having a double body (1958 ; 58) comprised of their self and the spirit of the character they are enacting (ibid, 134). This is a notion similar to Plato's conception of metaxy - a state of "in-betweenness"; of "belonging completely and simultaneously to two different autonomous worlds" (Falconer, 2011). Thus when we move between different FPsM we are still aware of the existence of the others as alternative forms of meaning, but the experience of virtual reality, because it involves the subsuming of the perceptions and a sense of displacement of space, also has an element of doubling of location. As Geniusas states "While one remains conscious of the "here and now" in the background, one is thematically immersed in the "there and then." (2019; 6).

Immersion and transition

As immersion is a displacement of the actual reality around us with a computer-created reality, the act of immersion requires a transition between these two worlds (Geniusas, 2019; 6)

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