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Believing the virtual: semio-philosophical fundaments and narrative consequences of experience in VR

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Abstract The topic at the center of this paper is the renowned believability of Virtual Reality, which is deemed as capable to both replicate and create experiences beyond representation. A characteristic which has historically represented a critical issue for disciplines such as semiotics, seemingly unable to efficiently apply its methodology to such experiential narrations in which feelings and sensorial immersion seems to dominate meaning-making. To overcome this issue, we examine the Peircean notion of *belief* and propose to correlate this concept with the form of embodied knowledge that we constantly use and produce to act in virtual contexts and that is enacted through interactions. Indeed, since beliefs are tightly bounded to a way to *produce* intuitively trusted inferences, this notion can both explain the psycho-phenomenological effects of VR and expose it as a new discursive form of rhetoric. Such proposal is then epistemologically justified from both the standpoint of semiotics and of the theories of embodiment. Finally, in the conclusions we expose how such notion could allow us not only to finally have a strong grip on VR narrations but also to rethink the very notions of experience and virtuality in a perspective that is of great interdisciplinary value.

Keywords: embodiment, VR, experience, semiotics, rhetoric

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0. Introduction

In the contemporary discourse of advertisement, there is a tendency to present and sell everything as an *experience*: food, journeys, events, but also art, devices, software and much more. Such discourse implies a notion of experience that is grounded on three main isotopies: body (experience belongs to the domain of what is sensible), truth (experience is beyond representation), and subjective unicity (experience cannot be fully repeated nor fully explained). This trend, however, comes actually decades after the transcultural success of a media that defined itself in experiential terms since the beginning: digital games. Indeed, videogames pretended to offer to their players much more than representation by claiming to allow nothing less than a "double life"[1] and already in 1993 the fighting game *Mortal Kombat* would state to be "so real it hurts". Interestingly enough, the first interdisciplinary academic studies on such form of

[1] https://www.youtube.com/watch?v=QIW4HMl81hw

textuality actually confirmed the potentiality of such media to offer an unprecedented «first person experience» (Harrigan & Wardrip-Fruin 2006). Among the many reasons for this, the one that interests us particularly here is the major involvement of the player's body in terms of *immersiveness*. In fact, the relevance of this embodiment was so great that humanistic disciplines such as semiotics were deemed as unable to make relevant analyses since digital games were defined as stories «for eyes, muscles and ears» (Grodal 2004) which required a real *effort* unexplainable in terms of signs (Aarseth 1997). An exclusion which was correctly foreseen by Maldonado (1992) and which is not very surprising if we also consider the intellectual context of these years which had at its center theories such as the ones of embodiment (Varela *et al.* 1993) and discoveries such as mirror neurons (Gallese 1996). On its side, the videogame industry has also increasingly invested on devices (such as the Nintendo Wii's motion controllers or the new PS5 "dualsense" controller), strategies (transparent interfaces such as in *Myst* and better control mechanics in *Halo 2*) and photorealism (such as with raytracing or MetaHuman) so that virtual worlds explored at home[2] would include more and more aspects of the player's phenomenologically embodied reality. An investment and technical improvement with the main goal of replicating many aspects of *feeling* in virtual simulations (Swink 2008) which influenced also what is known as the "second spring" of virtual reality headsets (VR from now on), offering a new definition of this "immersiveness". As a result, contemporary VR experiences are deemed as capable to make the user *feel* as if she was in another world. So much that, as we personally experienced, being consciously aware to be in a simulation would have little or no impact on our heart racing, legs trembling, hands sweating, stomachache and visceral fear if we were to suffer from height dizziness in real life and see ourselves falling from a skyscraper in virtual reality (like in "Face your fears" of 2017). Therefore introducing the idea of contemporary narrations being apparently somehow at the opposite of the *suspension of disbelief* and being effectively beyond representation. In such narrations, the feelings born from first-person experiences and relations with the images are considered as the true content and the true value: so much that VR is often described as an "ultimate empathy machine" both in the discourse of the media and in the scientific field of psychological experiments (Herrera et al. 2018). Such "experience" is however obviously a construed effect of meaning and actually depends heavily on the represented content. In fact, it is deeply related with meaning-making in visual media in general, both in terms of illusions of reality (Giuliana and Alexiev 2020) and in terms of protheses of subjectivity (Paolucci 2020). Additionally, even the very wording for which we can talk today about a "virtual experience" comes from a recent semantic shift in our societies (Volli 2020). But instead of analyzing all the reasons behind this "myth" of experience in terms of virtual realities as second realities (distant and different yet identical for phenomenological reasons), in this paper we will focus on the philosophical fundaments of the perceived believability of this experience by putting in relation the involvement of the player's body and mind with Sebastiano Vecchio's recent studies on the Peircean notion of *belief*.

1. Knowledge VS Belief

Why do we believe the representations of virtual realities in such a peculiar way? From the standpoint of semiotics, the reason cannot be found in VR itself but must rather be searched in how our mind can believe, know and grasp any given reality. On this point, in his 2019 *Semiosi e conoscenza* Professor Sebastiano Vecchio highlighted how curious

[2] Arcade

and yet precious was Peirce's answer to such question. Indeed, for him understanding any aspect of reality entailed a "surprising" experience of the world (Vecchio 2019: 16) followed by a three-step logical process going chronologically from abduction to induction (*ivi*: 15). What is interesting here is that, given the status of abduction, the first step corresponds to an act of guessing almost by chance (*ivi*: 18) through a practical act of trial and error (*ivi*: 19). As a consequence, Vecchio underlines that these guessing acts are the result of a «pre-cognitive mechanism with instinctual basis» (*ivi*: 24), a capacity of *intuition* belonging to all animal beings and following the evolutionary rules of natural selection (*ivi*: 26). This is a fundamental point, since such claim implies that there is a fundamental truth in intuition/istinct (*ivi*: 99) through the relation between the world and the mind (*ivi*: 100): a truth corresponding to a form of *belief* (Idem). Belief is indeed one of two possible kinds of truth (*ivi*: 98) since believing cannot be completely separated from any form of knowledge (*ivi*: 94). More specifically, in Peirce a belief is a habit (*ivi*: 97) and a background required to build different types of truth and successive types of knowledge (*ivi*: 95). Such habit is fundamental to act in the real "vital" world (*ivi*: 97), a practical habit which may be unconscious (*ivi*: 96), clearly different from the kind of habits occurring in the scientific discourse. In fact, such belief is considered by Peirce in terms of a semio-logical "natural lumen" between rationality and biology (*ivi*: 102) which gradually decreases with the accumulation of scientific knowledge (*ivi*: 105). Finally, such belief can manifest itself as a «*feeling of believing*» (*ivi*: 96) and is socially shared. Vecchio's precious remarks were then continued and even more refined in his 2020 paper *Modi e questioni del credere*. In this work, the author starts from the previous idea of beliefs as habits which are needed to act, taking often risks, and cannot be conceived as abstract mental representations (Vecchio 2020: 182). This time the emphasis is however put on the fact that beliefs are habits so strong that they are defined by our incapacity to put them in doubt until we are somehow obliged to do so because of a contradictory state between such habits and our direct experience of the world. In other words, that we cannot willingly doubt about our beliefs (*ivi*: 183), although some events/experiences can make us doubt about them since they somehow reveal to ourselves that such habit existed. A definition which fits extremely well with all the spheres of the human perception (which can be put in doubt only through expedients such as illusions) and with the domain of embodied sensorimotor interactions (let's think in particular of all the knowledge required in actions such as catching a ball). On this point, the Italian author makes an interesting connection with Pierre Bourdieu's similar conception of beliefs as something which needs to be forgotten to act, thus conceiving them as "bodily states" during which agents do things which make sense although this sense is almost unknown to them (*ivi*: 182). As a consequence, and in conclusion, Vecchio highlights how there is a direct connection between instinctively believing something and genuinely trusting it (*ivi*: 189), from which comes the linguistically generated persuasive power of the make-believe and discursive techniques to produce effects of beliefs, such as rhetoric (*ivi*: 188), through *evidence* rather than through *proofs*.

2. From Abduction to Embodied Cognition

What we propose in this paper is to correlate Peirce's notion of belief with the form of embodied knowledge that we constantly use and produce to act in the world and that is enacted through interactions. In other words, we propose to classify as "beliefs" both the cognitive contents and the semiotic process involved in embodied interactions. Which obviously doesn't imply to reduce beliefs uniquely to this class of objects.

Such proposal comes first of all from an immediate and somehow trivial observation: that technologies such as VR precisely find their specificity in allowing the user to act in virtual worlds in embodied ways. As an example, whereas on a PlayStation 2 a player would grab a cup by pressing the X button, in VR the controllers are specifically designed to allow us to use our real-life fingers as if they were actually grabbing an item. Similarly, the sense of spatial presence ca be explained in term of a produced of an *incorrect* knowledge and belief coming from senses and sensations (Murphy 2017) and especially from the VR's capacity to trick perception so that we feel as if items were trespassing the boundaries of our peripersonal space which is a psychological construction belonging to a very instinctive part of our mind (di Pellegrino and Làdavas 2014).

As a result of these characteristics, most of what the user does in virtual reality, such as shooting a virtual basketball, entails not only an explicit encyclopedic knowledge necessary for inferences (Eco 1979) but also a form of *intuitive* knowledge and reasoning quite similar with the specific mechanism of *belief* in terms of enacting something in us that we cannot fully describe in logical terms. Hence, the innate trust-meaning of beliefs could philosophically explain at least one aspect of the psychologically perceived effect and feeling of realism. It must be highlighted that such realism would not occur if the question were merely to apply the cognitive models of the physical world to the virtual one in a 1 to 1 ratio. In fact, shooting a basketball in VR is something sensibly different from the "real" act since a virtual ball has, for example, no weight. Similarly, orienting ourselves in VR has been proved to activate the same area of the brain but with a completely different neuronal activity (Zahra 2015). More generally, virtual realities have always introduced the sense of "experience" through cognitive metaphors (Grodal and Gregersen 2008) rather than by simply mimicking the "real thing". What constitutes the sense of realness of the virtual, and what makes the Peircean perspective so precious, is therefore the involvement of the abductive way through which we make sense of any given reality, of a certain kind of reasoning giving birth to a certain form of knowledge: it is the fact that beliefs are both required a priori as a background (made from the one of the physical world and often genetically hereditary) and construed a posteriori from the experience itself through signic modes of production (Eco 1975). The question is however if such claim can be considered as epistemologically grounded. More precisely:

1. Can interactions in VR be considered as embodied and enacted actions?
2. Can we conciliate Peirce's perspective with the one of the "4E" paradigm?
3. Is there a specific theory of the mind inside the 4E approach that can validate the correlation between embodied beliefs and trust?

On these points, three different arguments can be made. The first one is that the theories of embodiment and enactive cognition are already part of the scientific literature on VR, both as theoretical reflections (Grimshaw 2014) and as concrete applications for medical purposes (Matamala-Gomez 2019). Considering the interactions and effects of VR from the cognitive standpoint of the "4E" (Newen *et al.* 2018) is therefore an epistemologically speaking unproblematic. The second question is if we can legitimately use the Peircean and semiotic perspective inside such cognitive paradigm. On this point, scholars such as Claudio Paolucci have successfully done so since 2011 and up until very recently (Paolucci 2021). More than that, Peirce's theory is itself actually present inside some of the most important works of this "field" such as in the case of the cognitive archeology of Malafouris (2014). Of course, our hypothesis could still be demonstrated as a mistake in future discussions and in a more thorough exegetical and philological analysis of Peirce's work. Such analysis exceeds however the

goals of this paper and would constitute a different work. Finally, since we are making an assumption about how our mind can semiotically construct a feeling of belief, it is necessary to verify that our claim is not in contradiction with theories of the mind that are akin to our chosen paradigm. On this point, we have until now referred to the general field of the "4E" in broad terms and by overlooking the actual differences that may exist in each one of the "E's" (Ward 2017). Moreover, our semiotic problem of the "believability" is arguably not the one directly at the center of the embodied paradigm and of its most important statements and findings. Yet, a specific theory of the mind grounded on an embodied perspective and making statements similar to ours does exist. Such theory is Prinz's theory of emotions as in his 2006 book *Gut reactions*. In such perspective feelings are «brain states in perceptual systems» (Prinz 2006: 242) and perceptions themselves are highly semiotics by being I) inferential (*ivi:* 225) II) relational (*ivi*: 226) III) culturally informed under the form of *habits* (*ivi*: 150) IV) triggers of complex semantic representations (*ivi*: 190) and in definitive *significant*. At the same time, they are generally speaking bottom-up inputs (*ivi*: 222) and/or often unconscious processes (*ivi*: 202), which are in some sense designed to be a kind of *preferential* way to understand the world (*Ibidem*) and therefore have an innate value of truth (*ivi*: 262). Therefore, Prinz's theory of emotions actually comprehends a vision of "proprioception" and of the "feeling" similarly to ours by conceiving both of them as cognitive elements/states endorsed with veridictive and representational power. In conclusion, at the light of these three arguments, our proposal should be, in principle, epistemologically acceptable.

3. Conclusions

Rethinking the meaning-making of VR experiences as being mostly grounded on beliefs has two main consequences, one so to speak "endogamic" and one interdisciplinary. The first one is to explain the phenomenological and psychological effects of VR through the particular metalanguage, bibliography and standpoint of semiotics and philosophy of language. A "ownership" which could allow us in future works to use virtual realities as case studies to critically rethink and refinish the very concepts of experience, knowledge, cognition, perception and language which were used here. Indeed, although the interpretative (Eco 1997) and cognitive traditions (Zlatev 2012) of semiotics are the most known for inquiring on the human mind, the themes at the center of our work are of key importance for the whole community of semiotics and philosophy of language. In fact, even the more textualist and so to speak linguistic branch of semiotics has thoroughly reflected on the role of the body, of proprioception, experience, passions and even pulsions (Beividas 2016) through key authors such as Greimas (1991), Marrone (2005 & 2007) and Fontanille (2004 & 2011). These arguments are therefore not new nor extraneous to semiotics. Additionally, if we consider that videogames are among the world's main form of entertainment and we add to this the very recent economic and social investment on VR (think of *Meta*), such rethinking appears as a necessity not only for the analysis of these new texts (requiring an adequate revision of our methods) but also for any kind of inquiry on culture and societies in general. Lastly, recognizing the central role of beliefs in the construction of meaning implies for us to efficiently update our very notion of narration.

The second consequence, differently and yet consequently, is an interdisciplinary one. On this point, first of all it is worth noting that finding a textual methodology to analyze virtual realities (videogames and VR) without focusing on the explicitly represented content has been a central issue of game studies since the very beginning. Still today, the most important finding on this regard has perhaps been to focus on the rules of

interactions (Bogost 2007) to find underlying messages and values. In respect to this, *beliefs* introduce the possibility of a semiotic and discursive analysis of the feelings. The narration of VR texts could hence be explained in terms of experiential rhetoric and be analyzed from the very precise and inclusive semiotic approach. More generally, since its modern origin semiotics was born as a discipline with a critical attitude toward the *natural* and the *evident* (Barthes 1957), two key words in the discourse around VR. Indeed, the very essence and project of VR is the «presentation of virtual objects to all of the human senses in a way identical to their natural counterpart» (Székely and Satava 1999). A semiotic take on this topic could both problematize a naturalness too often given for granted and at the same time avoid to fall into the impasse of debating about whether this naturalness if real (an assertion mainly made on the basis of an erroneous idea of the primacy of the percept) or false (an approach too often neglecting the role of the empirical body and ending in cultural relativism) by focusing instead on how the human mind works to produce it through a blending of language and body. This is precisely what we have tried to do with this paper by claiming that if I) we recognize cognition and its perceptive processes as part of beliefs II) accept beliefs as a form of knowing and knowledge III) endorse an intuitive dimension of knowing through believing IV) grant a special rhetoric status to beliefs in terms of trust V) then we have no reason to doubt that virtual realities possess a particular and potential narrative capacity obtained through the necessity to act inside of them through "vital" habits.

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