

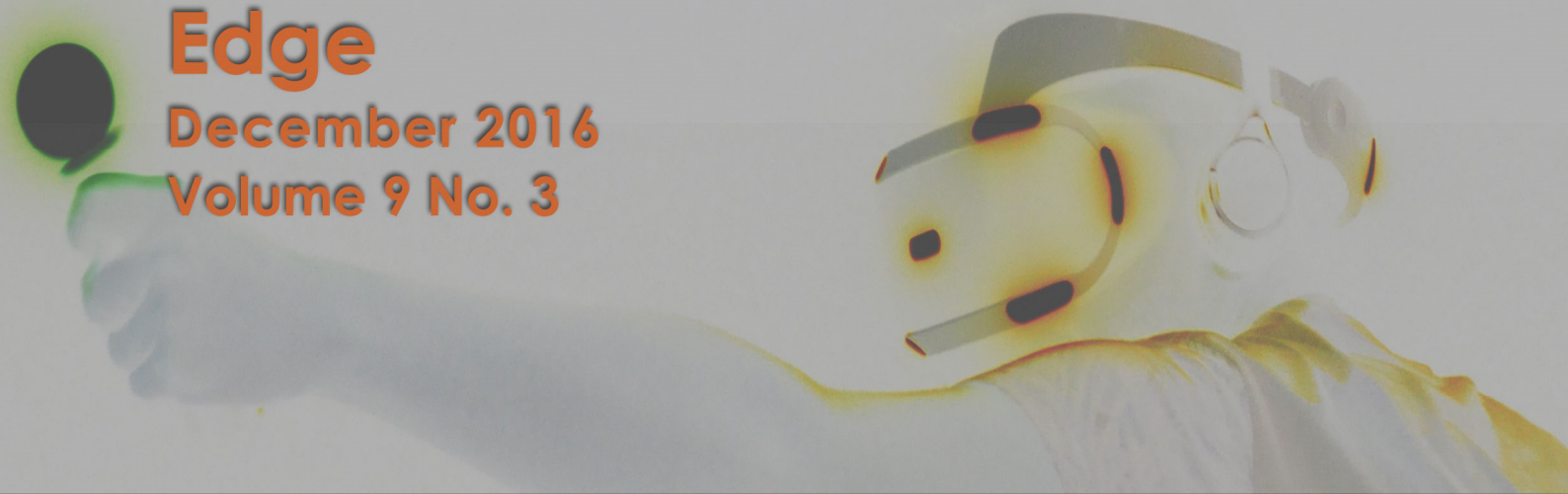
Journal of • Virtual Worlds Research

jvwresearch.org ISSN: 1941-8477

Edge

December 2016

Volume 9 No. 3



(c) Image by Marco Verch. Sony: Project Morpheus

Volume 9, Number 3

Edge

December 2016

Editor In Chief & Issue Editor

Yesha Sivan

Tel Aviv University
The Coller Institute of Venture

Coordinating Editor

Tzafnat Shpak

Cover image: Marco Verch. Sony: Project Morpheus
<https://www.flickr.com/photos/30478819@N08/19701245783/>



The JVWR is an academic journal. As such, it is dedicated to the open exchange of information. For this reason, JVWR is freely available to individuals and institutions. Copies of this journal or articles in this journal may be distributed for research or educational purposes only free of charge and without permission. However, the JVWR does not grant permission for use of any content in advertisements or advertising supplements or in any manner that would imply an endorsement of any product or service. All uses beyond research or educational purposes require the written permission of the JVWR. Authors who publish in the Journal of Virtual Worlds Research will release their articles under the Creative Commons Attribution No Derivative Works 3.0 United States (cc-by-nd) license. The Journal of Virtual Worlds Research is funded by its sponsors and contributions from readers.

Journal of Virtual Worlds Research

jvwresearch.org ISSN: 1941-8477

Volume 9, Number 3

Edge

December, 2016

The Experience Machine: Existential Reflections on Virtual Worlds

Stefano Gualeni

Institute of Digital Games, University of Malta

Abstract

Problems and questions originally raised by Robert Nozick in his famous thought experiment ‘The Experience Machine’ are frequently invoked in the current discourse concerning virtual worlds. Having conceptualized his *Gedankenexperiment* in the early seventies, Nozick could not fully anticipate the numerous and profound ways in which the diffusion of computer simulations and video games came to affect the Western world.

This article does not articulate whether or not the virtual worlds of video games, digital simulations, and virtual technologies currently actualize (or will actualize) Nozick’s thought experiment. Instead, it proposes a philosophical reflection that focuses on human experiences in the upcoming age of their ‘technical reproducibility’.

In pursuing that objective, this article integrates and supplements some of the interrogatives proposed in Robert Nozick’s thought experiment. More specifically, through the lenses of existentialism and philosophy of technology, this article tackles the technical and cultural heritage of virtual reality, and unpacks its potential to function as a tool for self-discovery and self-construction. Ultimately, it provides an interpretation of virtual technologies as novel existential domains. Virtual worlds will not be understood as the contexts where human beings can find completion and satisfaction, but rather as instruments that enable us to embrace ourselves and negotiate with various aspects of our (individual as well as collective) existence in previously-unexperienced guises.

1. Introduction

‘The Experience Machine’ is a thought experiment that was proposed in the 1970s by American philosopher Robert Nozick. In it, Nozick hypothesized the existence of a device capable of disclosing interactive virtual experiences. The experiences upheld by his fictional machine are envisaged to be not only persistent, but also indistinguishable from those that we, as humans, can develop in relation with the actual world. In this outline of Nozick’s thought experiment, I am using the descriptor ‘actual’ to indicate the analog contexts that we inhabit and share as (and with) biological creatures.

Nozick’s thought experiment challenged us to envision having access to a device that could indefinitely supplant our everyday experiences with virtual ones designed to maximize our pleasure and satisfaction. By presenting us with the possibility of an experience machine, he invited reflections on whether the way we live our lives is solely driven by the pleasure principle, or if there is something else that we value other than how we feel ‘from the inside’. If such a machine existed, asked the American philosopher, “would you plug in?” (Nozick, 1974, 42)

Nozick’s mental exercise has been differently invoked and interpreted in various contexts. Some authors have understood ‘The Experience Machine’ as implicitly giving rise to arguments against utilitarianism; others have interpreted it as opposing hedonistic positions in both ethics and psychology (Sober and Wilson, 1998; Feldman, 2010). More recently, Robert Nozick’s *Gedankenexperiment* has been examined in fields of inquiry such as media studies and philosophy of technology (Lin, 2016; Silcox, 2017). Stimulated by developments in virtual technologies, some of the questions originally raised by ‘The Experience Machine’ are presently used in those disciplines as springboards for reflecting on the qualities and on the effects of our interactive experiences in (and of) virtual worlds.

Having conceptualized his thought experiment in the early seventies, Nozick could not have fully anticipated the numerous and profound ways in which the diffusion of computer simulations and video games came to affect the Western world. Besides, his imaginative exercise was meant to kindle questions concerning our ethical compass, not existential and phenomenological quandaries ensuing from experiencing interactive, artificial worlds. In the Western world, social activities like the crafting of- and the access to- virtual worlds are increasingly more affordable and already deeply integrated in social practices (Gualeni, 2015b). Moreover, devices that recall those outlined in ‘The Experience Machine’ appear to be already at the outer edges of our technological reach. It is hence obvious to me that today – more than forty years after the original formulation of Nozick’s thought experiment – it would be paradoxical to think about those machines as if they were still imaginary, inscrutable gizmos, rather than the concrete aspiration of consumer-technology companies. In this context – a context in which the virtual worlds of video games are already established as a prominent form of cultural mediation and meaning-making – this article will supplement Nozick’s reflections and to further elaborate on his thought experiment through the lenses of existentialism, and philosophy of technology.

2. A Machine for Experiencing

In his 1962 essay ‘The Myth of Total Cinema’, French film critic and theorist André Bazin interpreted the specific ways in which cinema reproduced images, sounds, and motion as the first, rudimentary steps towards building a machine that is capable of experientially recreating the world. From his point of view, the technical advancements of cinema – when not merely directed towards the pursuit of capitalistic gain – constitute an evolutionary process aimed at crafting progressively more accurate and sensorily complete artificial experiences. For Bazin, the myth guiding the evolution of cinema consisted of the aspiration to achieve those same experiential effects that Nozick later attributed to his fictional machine. He believed that cinema ultimately aspires to be the “[...]”

recreation of the world in its own image, an image unburdened by the freedom of interpretation of the artist or the irreversibility of time.” (Bazin, 1967, p. 21)

Pursuing academic research at the intersection of film studies and game studies, Mark J. P. Wolf noted that the ambitions expressed in ‘The Myth of Total Cinema’ and its underlying ideology are very much alive and well today, and are clearly materialized in the imaginary future of virtual worlds. As recent examples of cinematic incarnations of the ‘myth’, Wolf mentioned the movies *Total Recall* (1990), *eXistenZ* (1999), and *The Matrix* series (1999 and 2003), in whose fictional scenarios experience machines exist and have various societal applications, from entertainment to the subjugation of humanity. In other words, these are movies in whose fictional contexts the myth of total cinema had been technically achieved in its complete immersivity and indistinguishability from lived experience (ibid.).

In the current age of digital mediation, the disclosure of a convincing ‘illusion of a world’ can be similarly identified as one of the most evident aspirations guiding the advancements of virtual reality and video game technologies (Gualeni, 2015a, 45, 46). Wolf accordingly proposed, in his 2015 essay ‘Video games, cinema, Bazin, and the myth of simulated lived experience’, to recognize video games as expressive forms through which the myth of total cinema and its ambitions are still pursued in contemporary Western cultures (Wolf, 2015). This way of approaching video games is in fact not only consonant with what Bazin described in ‘The Myth of Total Cinema’, but – as will become clearer later in this essay – can also be recognized as the ideological foundation to the ways in which we design, criticize, and attribute cultural values to video games and, more generally, to virtual worlds.

Toward the end of the nineteenth century, the German philosopher Ernst Kapp proposed an understanding of technology according to which human beings develop and use artifacts with the fundamental purpose of overcoming the limitations and the insufficiencies of their native organism. In his vision, technologies are (conscious or even unconscious) artificial supplementations of certain functions that are originally accomplished by human organs (Kapp, 1877). Kapp’s functional understanding of technology is not limited to the use of various tools to enhance our capabilities to perceive, transport, communicate, and interact with the world. He also recognized our artificial extensions as cognitive instruments (Gualeni, 2015a; Gualeni, 2015b, p. 68). The invention of the mechanical clock is an example that is frequently used to illustrate this point; that is to say, to demonstrate how our technologies (and our interconnected technological systems) influence and shape our thought in ways that are subtle, pervasive, and that transcend the practical functions for which those artifacts were originally designed. American historian Lewis Mumford, for example, famously viewed the mechanical clock as the defining machine of the industrial age. Unlike most of his contemporaries, who identified in the steam engine the key creation that propelled us into industrialism, Mumford realized that it was the clock, on account of its effectively ‘producing’ a regular and parcelized understanding of time, that paved the way for all the technical and social developments of that period (Mumford, 1934, pp. 14-15). Similarly, Dutch historian Edward Jan Dijksterhuis maintained that, in the early Modern period, the precise and ingenious mechanism of clocks persuaded physicists that nature itself worked like clockwork, inspiring the development of classical mechanics (Dijksterhuis, 1986, 442f).

In the 1980’s, and in line with the understanding of the cultural effects of artifacts encapsulated in the examples above, American media theorist Neil Postman argued that we should avoid approaching our technical tools and media as if they were neutral instruments, as they never purely accomplish instrumental tasks. Rather, our technical creations also always function as mediators, and in their mediating roles, they inevitably “classify the world for us, sequence it, frame it, enlarge it, reduce it, colour it, argue a case for what the world is like” (Postman, 2005, p. 10). Several philosophers of technology who have adopted a general interpretation of technological tools as

mediators understand technical systems as dynamic realms for self-discovery and self-transformation (Verbeek; 2011; Gualeni, 2015b; Zarkadakis, 2015; Gualeni, 2015c). As well as any other technologies, virtual worlds could (and perhaps should) be recognized as systems that allow us to materialize our worldviews and ideas, as ways to make our beliefs and aspirations into objects of critical (and self-critical) evaluation.

This aspect of our relationship with technologies becomes, I find, particularly interesting when it comes to acknowledging the fact that virtual experiences and digital worlds are (still) encountered through devices, i.e. through interfaces and technological artifacts. From this perspective, we can approach Nozick's 'The Experience Machine' not only as a thought experiment meant to problematize ethical hedonism or utilitarianism, but also as a way to encourage and facilitate reflections on the ethical quandaries ensuing from creating and utilizing technologies that disclose virtual experiences. To clarify this point and its relevance, I will discuss a few practical examples, which will reference the movies discussed in the previous section of this essay.

In both *Total Recall* and *eXistenZ*, the protagonists physically encounter a machine that is capable of disclosing persistent virtual worlds in ways that are indistinguishable from their everyday experiences. Albeit skeptically, and for different reasons, both Quaid (in *Total Recall*) and Pikul (in *eXistenZ*) willingly make the decision to plug into each respective version of the experience machine and plunge into illusory worlds that are supposed to be pleasurable.

The case of Neo (the protagonist of *The Matrix* trilogy) is, I believe, significantly different as far as the objectives of this essay are concerned. At the beginning of the first movie of the series, Neo is unaware that he is plugged into a technological system that 'feeds' his brain the experiences of an artificial world. Since he had been conscious, Neo's world had always been a product of an experience machine, a machine that he never agreed to be plugged into and that he never encountered as an object of experience (at least he did not at that point in the movie). In a large portion of the first instalment of *The Matrix*, Neo cannot thus develop a complete ethical and ontological understanding of his condition, let alone articulate a critical stance towards the artificiality of the virtual world in which he is immersed.

The cited movies can be understood as presenting two different situations: one in which plugging into the machine is based on a consciously chosen relationship with a technological artifact, and one in which that is not the case. It is my conviction that the recent philosophical discussions stimulated by Nozick's thought experiment concerning our relationships with virtual worlds are largely a product of how 'The Experience Machine' presents a scenario that – paradoxically – encompasses both the situations described above. Allow me to elaborate on this point by resorting to extracts taken directly from 'The Experience Machine':

- On the one hand, Nozick clarifies that his fictional machine offers the possibility to "[...] pick and choose from their vast library or smorgasbord of such experiences, selecting your life's experiences for, say, the next two years. After two years have passed, you will have ten minutes or ten hours out of the tank, to select the experiences of your *next* two years." (Nozick, 1974, p. 42) Concordantly, to operate the machine and – crucially – in order to make the decision of whether to plug in or not, its users must first encounter the experience machine as an object. There must be, put in a somewhat simpler way, occasions before plugging into the machine and between experiential sessions when the machine is present to them as a mediating device, as the physical 'gateway' to certain possibilities of experiencing and being.
- On the other hand, the machine does not only need to provide an illusion of a world that is smooth, consistent, and experientially complete, but – for the *Gedankenexperiment* to work – the users need to have no recollection of the experiences and choices leading to plugging into

(or plugging back into) the machine. As Nozick puts it, “while you are in the tank you won’t know you’re there; you’ll think it’s actually happening.” (ibid.)

The hypothetical setup of ‘The Experience Machine’ as a thought experiment thus requires our making volitional choices in relation to a physical device. At the same time, for the fictional device to produce the envisaged experiential effects, the choices and the awareness mentioned in the previous passage must be removed from the users’ consciousness as soon as they plug into an experience machine. What I want to suggest here is that if users could remember the various steps and choices leading to their plugging-in, they could not avoid filtering (at least initially) their virtual experiences through the awareness that the world that they are experiencing is in fact a synthetic artifact.

Further complications arise in hypothetical scenarios like those of unplugging from the experience machine or in the case of an interruption of the streaming of artificial experiences (regardless of its accidental or scheduled nature). In those circumstances, memories and choices of our lives from before plugging-in will need to be recuperated and reactivated. Why? If not to avoid psychological damage upon returning to the actual world, that awareness will at any rate be indispensable for taking significant existential decisions such as whether to plug back in or what future developments to choose for the continuation of our life in that virtual world (as envisioned by Nozick himself).

On the basis of Nozick’s core hypothesis, that is to say the possibility for technology to have a totalizing and deterministic effect over human experience, I approached ‘The Experience Machine’ specifically from perspectives borrowed from philosophy of technology. This led to the surfacing of a paradox at the core of Nozick’s thought experiment: a situation of irreconcilable ambiguity in which human beings are expected to be at the same time selectively aware and unaware of the mediating role of a virtual reality device in relation to their experience.

To be sure, this logical impasse can be sidestepped quite easily, albeit perhaps inelegantly, by hypothesizing yet another device: an apparatus capable of compartmentalizing our awareness and selectively activating areas of it. With this additional conjectural device, we would be able to target and inhibit memories of our relationship with the experience machine, enabling us to forget having programmed one or having decided to plug into one. For the sake of simplicity, I will call this additional, fictitious apparatus the ‘memory suppressor’.

Did Nozick implicitly think that a memory suppressor would be part of an experience machine? Let us suppose, as a first conjectural scenario, that he did not. If that were the case, and for the reasons articulated above, the immersion provided by plugging into his fictional device could not be expected to have a totalizing effect. Once plugged into the experience machine, in fact, people could not avoid remaining conscious of the synthetic constitution of the virtual worlds that they were experiencing. As a consequence, the relationships that can be established with those worlds could not (or at least could not initially) smoothly and convincingly hijack those of the world that we index as actual¹.

¹ Imagining myself in that situation – which would be analogical to a scenario that Greg Egan outlines in his novel *Permutation City*, – I believe that the awareness of the artificiality of the virtual worlds one finds oneself immersed into would be in itself almost unbearable from a psychological point of view (Egan, 2008, p. 3). It would be a state of mind similar to a paranoid fixation, which is, however, unlikely to be a permanent one. Such attitude towards the world would be – Egan argues – “too bizarre to be sustained for long.” (ibid.)

In this first hypothetical scenario, in which a ‘memory suppressor’ is not a technical component of an experience machine, my expectation is that, in a way that is not dissimilar from fictional content of existing media, the users allow themselves to temporarily suspend their disbelief and to be – to different degrees – ‘immersed’ in virtual worlds (Murray, 1997). They will, however, inevitably remain aware of the artificiality of that experience and conscious of the existence of a world outside of the simulation. For this reason, I can argue that the machine imagined by Nozick could not supplant our relationship with the world wholesale without a memory suppressor. In this first situation, I expect that users would relate to Nozick’s device in a way that is similar to how they currently engage with video game consoles or virtual reality gear. By that I mean that they would intuitively consider the experience disclosed by the machine as that of a derivative world meant for entertainment, relaxation, education, training, and so on. Conceived of as such, I envisage that people would choose to plug into an experience machine with the expectation of pleasure, or self-betterment through play, or communication, discovery, and escapism, but only for a limited period².

I consider this first, tentative answer to be quite dull. It is, to begin with, largely speculative and rooted in personal experiences and feelings. On top of that, it does not take into consideration determinants such as personal inclinations, states such as those of depression and low self-esteem, physical and emotional loss, as well as any other form of psychological trauma that might encourage individuals to seek preferential meaning-making and extended relief in virtual worlds. The greatest deficiency that I can find in this answer to Nozick’s hypothetical questions is, however, its negligible philosophical significance. The appeal and the immersive effects of virtual worlds of the kind just described can already be experienced, to a certain degree of aesthetical fidelity, with current virtual technologies, and could already be suitably explored with the tools and methods of empirical science. In other words, if the experience machine did not feature a way to selectively inhibit our awareness of the machine itself, it stands to reason that Nozick’s interrogatives are more efficiently tackled by fields such as cognitive psychology or game user research.

Abandoning this first hypothetical scenario, the upcoming section will embark on the more challenging and, I believe, more philosophically fruitful question of whether one would plug into an experience machine that *did* include a memory suppressor.

3. A Thought Experiment within a Thought Experiment

Reading *Anarchy, State, and Utopia* (the book containing ‘The Experience Machine’), it is not entirely clear what broader ethical and philosophical objectives Nozick was pursuing with his famous *Gedankenexperiment*. What is, instead, obvious in his text is the fact that he considered that most people would not opt for plugging into an experience machine in a permanent or semi-permanent fashion (Nozick, 1974, p. 44). According to Nozick, there are other things that matter to people in addition to pleasure, and in his book he supported this belief by appealing to three motivations. Out of the three of them, I consider the third to be the most interesting and provocative. In his third motivation, and in line with what was discussed in the previous section of this essay, Nozick predicted that many people would refuse the offer of a permanent connection with an experience machine on the basis of it being nothing more than a human artifact. We would be resistant, he claimed, to abandon the world that we index as ‘actual’ for a virtual one that is neither more unfathomable nor more meaningful (ibid., p. 43).

² Mentioning several positive social uses for the experience machine in this paragraph, I am not intending to claim that the experience machine would only be used in those manners and with those intentions. In line with a long tradition of dystopian social science fiction, we can easily imagine the machine being put to negative social uses - for punishment and correction rather than for the pursuit of a liberal education; for psychological and physical torture rather than for pleasure.

Even if we were somehow technically capable of inhibiting the awareness that we were connected to an experience machine, after having plugged into one, the conscious decision of plugging-in permanently (or semi-permanently) would still need to be taken by each individual user with the awareness that the machine is in fact a machine, and that the worlds that such machine discloses can neither be as complex nor as existentially significant as the actual one. I will now try to argue and explain in more detail why I believe that would be the case.

In the previous section of this essay, virtual worlds were recognized as derivative products that are inevitably conceptualized and built around specific (and specifically human) ways to perceive and understand what the actual world is and how it functions. To clarify this last point in particular, I would like to propose an imaginative exercise of my own. I encourage readers to imagine having at their disposal a specific kind of experience machine. This hypothetical device would generate and uphold ‘single player’ virtual worlds that are experientially indistinguishable from the one that we index as ‘actual’, and would allow its user to design his or her existential course, in a way that has an impact on the rest of the virtual world. The ‘single-player’ descriptor serves here to clarify that the phenomena, events, and relationships that constitute those virtual worlds are uniquely experienced by the one user who is plugged into a specific machine, and are not shared with other users plugged into similar devices³. The solipsistic machine described above would specifically allow its users to design their existence and experience anything they desire. It would also feature a memory suppressor that would automatically activate after a user plugged in.

Now, I ask each reader to imagine that, as an individual user, he or she decides to program such a machine to fulfil the dream of becoming a prominent scientist, say an experimental physicist. This objective would include experiencing years of strenuous experimental research work, facing self-doubt and the resistance of peers, and finally rising to international (simulated) fame. The premises for this thought experiment are designed to elicit feelings that I expect most people would find pleasurable. Witnessing one’s efforts leading to positive outcomes, overcoming obstacles, and being admired for one’s skills and contributions is likely not only to be inherently pleasurable, but also meaningful, in the existential acceptance of the term (that is, resorting to the consciousness of other people to complement and fulfil a personal sense of meaning and self-worth).

Let us take a step backwards for a moment, and let us suppose that the user that is about to plug into one of these hypothetical devices is informed that the machine can only disclose ‘single-player’ virtual worlds, worlds that are – furthermore – strictly reliant on the current understandings of physics. This entails that the simulation of physical phenomena that are possible in the machine cannot be deeper or more granular than those that we managed to study and understand in relation to the actual world⁴. What I mean to say is that our capability to understand and experiment with physics in virtual worlds (and even to virtually manipulate and subvert it) is inevitably bound by the

³ I believe it is important to clarify that in his thought experiment, Nozick does not explicitly state that his hypothetical machine exclusively discloses single-user experiences. The reason why I believe that is the case anyway is that the machine could not uphold a consistent, believable world in which two or more users wanted to experience things that were in conflict with one another or contradicted one another. The question remains open, however, concerning whether the machine could allow us to passively spectate somebody else’s virtual experiences (as a disembodied observer), or temporarily participate in it with limited agency (for example impersonating virtual insects or simulated, ghostly beings).

⁴ To be sure, this is not to say that simulated physics can be at best identical to actual physics; many video game worlds offer virtual worlds that playfully subvert physical properties and behaviours that we are familiar and scientifically well-acquainted with in the actual world. It could suffice, for example, to think of the possibility granted in the world of *Portal* (Valve, 2007) to create wormholes in tri-dimensional spaces (portals that allow space to be short-circuited), or the ways in which the concepts of time and causation are manipulated and subverted in video games such as *Blinx: The Time Sweeper* (Artoon, 2002), *Prince of Persia: Sands of Time* (Ubisoft Montreal, 2003), or *Braid* (Number Nine, Inc., 2008).

conceptual and experimental approaches to physics that are available to us as the creators of the experience machine. The very software and hardware components of the speculative machine in question can only be designed within those conceptual frameworks and on the basis of certain understandings of physics that were originally developed in relation to the actual world.

As a consequence of the machine's limitations, it should be clear to the reader that, as far as experimental science is concerned:

1. no phenomena or interactions beyond what we already know about physics will actually be observable (or even possible) when plugged-in. The experimental discoveries that the users will be responsible for in their simulated roles of prominent physicists will thus be fictitious, and could not be directly relevant to any actual scientific advancements;
2. no other conscious human being will witness, or appreciate, any of the work and achievements that the user will produce inside the virtual world, and even if anybody did - the value of those experiences and findings would be interesting only anecdotally, or for research into the human psyche and behavior (thus, producing new knowledge *through* virtual worlds and not *in* virtual worlds). For the reasons explained in point 1, no new particles or behaviors can actually be discovered in virtual worlds and no paradigm-shifting experiments can be actually run within them.

Having received this information, would one still decide to plug in and experience that existence? Would one not, instead, find it more meaningful to dedicate the time span of his or her biological life to somehow participating in the actual progress of humanity, for example by contributing to the actual growth of scientific knowledge, rather than in its virtual simulacrum? What I am trying to emphasize here is not that experimental science is the only way (or a particularly desirable way) to develop knowledge, but rather that the experiences upheld by the experience machine are inherently derivative. To be sure, I do not believe in the categorical impossibility for acquiring knowledge (or for triggering personal transformations) from simulated events and experiences. It is evident to me that there are many ways in which observing the lives of people plugged into experience machines could further our understanding of who we are as human beings. In fact, if we could look into someone else's simulated experience (see footnote 3), and if that person granted us permission to observe and study his or her simulated experiences and record data about them (or we somehow obtained the legal and ethical clearance to do so, in the case – for example – of people in a coma or non-human users), then we could definitely derive meaningful insights from them. For example, we could:

- detect and study psychological and behavioral patterns of its users (human or non-human) in a number of different contexts and situations,
- design virtual worlds so that their inhabitants could unwittingly perform citizen-science actions involving the analysis of actual data (similarly to current projects such as *Foldit*⁵ or *Play to Cure: Genes in Space*⁶),

⁵ Originally released in 2008, *Foldit* is a cross-platform online puzzle videogame that allows the players to simulate control of some of the biochemical processes involved in protein folding. It was developed by the University of Washington's Center for Game Science in collaboration with the UW Department of Biochemistry. The analysis of players' creative solutions to protein folding puzzles in *Foldit* allowed scientists to develop cures to diseases and pursue innovation in biotechnology (Eiben et Al., 2012).

⁶ *Play to Cure: Genes in Space* is a 2014 free, mobile video game through which players, flying a spaceship through hurdles and resources in space, help researchers analyze real genetic data used in cancer research. *Play to Cure: Genes in Space* is an ongoing project that was developed under the guidance of Cancer Research UK.

- stimulate and test new heuristic approaches and generate new hypotheses in a variety of epistemic fields, including self-discovery and self-construction,
- simulate and test new forms of social and economic organization.

Having outlined the experimental scientist scenario, would people consciously choose that path? I expect that the answer would be negative, as I am convinced that most of us would still be resistant to limiting our emotions, our social engagement, our professional efforts, and our personal aspirations (regardless of their merits) to artificial worlds. Nozick must have had the same intuition when he wrote that “[p]ugging into the machine is a kind of suicide.” (Nozick, 1974, p. 43)

4. Conclusion

Sidestepping Nozick’s questions, in this conclusion I would like to clarify that I did not mean to imply (in this essay or elsewhere) that the actual world will ultimately satisfy us, or that our expectations and aspirations will find an adequate response in our experiential relationship to it. If the romantic age had not offered enough examples as to why that might not be the case, Ancient Greek tragedies and the artistic and philosophical currents of Existentialism and Absurdism could also be mentioned as historical landmarks of Western culture’s awareness of the meaninglessness of our existential struggle in this world.

As a corollary to the arguments and perspectives developed in this essay, I would like to propose the idea that *all* worlds are ultimately absurd, and that technologies can never be expected to offer definitive solutions to the boring, painful, and even tragic dimensions of our existence. They are, I argue, better understood as existential tools: not as the contexts where we can find completion and satisfaction, but rather as instruments that enable us to embrace ourselves and negotiate with various aspects of our (individual as well as collective) existence in previously-unexperienced guises.

It is in relation to this standpoint that I claim that human beings cannot be existentially ‘completed’ by technological means. In the proposed perspective, this is not simply a problem with the current technologies or our mastery of them: we are constitutively bound to dissatisfaction, and driven to constantly explore and experiment with new worlds and unfamiliar possibilities of being. Virtual worlds, in their peculiar ways, arguably offer those experiences and possibilities, and in doing so, they contribute to our existential struggle both in allowing us to transcend some aspects of our everyday relationship with the actual world, and in disclosing new ways in which our very incompleteness can be experienced and understood.

References

- Bazin, A. (1967) [1962]. *What Is Cinema? Volume I* (Translated by Hugh Gray). Berkeley, California: University of California Press.
- Dijksterhuis, E. J. (1986). *The Mechanization of the World Picture: Pythagoras to Newton*. Princeton (NJ): Princeton University Press.
- Egan, G. (2008) [1994]. *Permutation city*. London (UK): Gollancz.
- Eiben, C., Siegel, J., Bale, J., Cooper, S., Khatib, F., Shen, B., et Al. (2012). ‘Increased Diels-Alderase activity through backbone remodeling guided by Foldit players’. *Nature Biotechnology* 30, (2), 190–192.

- Feldman, F. (2011). 'What we learn from the experience machine'. In J. Meadowcroft and R. Bader (eds.), *The Cambridge companion to Robert Nozick's Anarchy, State, and Utopia* (59-88). Cambridge (MA): Cambridge University Press.
- Gualeni, S. (2015a). *Enlarge your mesoscopy: a philosophical reflection on projectual ontologies and the human scale*. Paper presented at the 2015 euSLSA conference in Furjana, Malta.
- Gualeni, S. (2015b). *Virtual worlds as philosophical tools: how to philosophize with a digital hammer*. Basingstoke (UK): Palgrave Macmillan.
- Gualeni, S. (2015c). *Self-transformation through Game Design*. Paper presented at the 2015 Philosophy of Computer Games conference, BTK University of Art and Design, Berlin, Germany.
- Lin, E. (2016). 'How to Use the Experience Machine', *Utilitas*, 28, (3), 314–332.
- Mumford, L. (1934). *Technics and civilization*. London (UK): Routledge.
- Murray, J. (1997). *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. Cambridge (MA): The MIT Press.
- Nozick, R. (1974). *Anarchy, State, and Utopia*. New York (NY): Basic Books, Inc.
- Postman, N. (2005) [1986]. *Amusing ourselves to death: public discourse in the age of show business*. London (UK): Penguin Books Ltd.
- Silcox, M. (ed.) (2017). *Experience machines: the philosophy of virtual worlds*. London (UK): Rowman and Littlefield International
- Sober, E. and Wilson, D. S. (1998). *Unto Others: The Evolution and Psychology of Unselfish Behavior*. Cambridge (MA): Harvard University Press.
- Verbeek, P. P. (2011). *Moralizing Technology: Understanding and Designing the Morality of Things*. Chicago (IL): The University of Chicago Press.
- Wolf, M. J. P. (2015). Video Games, cinema, Bazin, and the myth of simulated lived experience. *G|A|M|E – The Italian Journal of Game Studies*, 4(1). Retrieved from http://www.gamejournal.it/wolf_lived_experience
- Zarkadakis, George. 2015. *In our own image: will artificial intelligence save or destroy us?* London (UK): Rider Books.

Ludographic references

- Artoon (2002). *Blinx: The Time Sweeper* (video game). Microsoft Xbox, Microsoft Games Studio.
- University of Washington's Center for Game Science (2008). *Foldit* (video game). Windows.
- Cancer Research UK (2014). *Play to Cure: Genes in Space* (video game). Windows.
- Number None (2008). *Braid* (video game). Various platforms.
- Ubisoft Montreal (2003). *Prince of Persia: The Sands of Time* (video game). Sony PlayStation 2.
- Valve Corporation (2007). *Portal* (video game). Various platforms.