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Simulation, Virtual Reality, and Global Skepticism: Technological Metaphors and the Reformulation of Traditional Problems of Metaphysics

Abstract: The arguments in favor of a simulated world, as put forth by Descartes, Putnam, Bostrom, and Chalmers, were constructed to achieve different goals. Descartes rejected global skepticism, Putnam rejected metaphysical realism, Bostrom advanced the argument for the existence of mathematical and informational foundations of the world, and Chalmers proposed the perspective of simulation realism. When viewed through the lens of methodology, the arguments put forth by Descartes and Putnam proved fruitful. When considered from a metaphysical perspective, the arguments put forth by Bostrom and Chalmers did not resolve any existing metaphysical issues. The objective of this article is twofold: firstly, to illustrate the inconsistency of simulation realism; secondly, to propose that the simulation hypothesis and simulation realism are merely consequences of the pervasive adoption of new technologies, namely the Internet, virtual reality, and artificial intelligence. Due to the technological metaphors used, the hypothesis of simulation and the realism of simulation have the merit of making a series of classical philosophical problems accessible to educated people in the 21st century. Among these is the problem of the foundations of reality, the possibility of the existence of a creator, the possibility of knowledge, the problem of human nature, the nature of consciousness, and so on.

Keywords: pancomputationalism, mathematical universe hypothesis, evil genius hypothesis, brain-in-the-vat argument, simulation hypothesis, simulation realism, artificial intelligence, virtual reality, consciousness.

Introduction

The history of philosophy offers a series of metaphysical idealism approaches (as exemplified by the works of Plato, Berkeley, Hegel, and, more recently, Bernardo Kastrup) that consistently claim that the external or sensory-accessible world is a simulation derived from a more fundamental structure that is endowed with authentic reality. These authentic realities may be called Platonic Ideas, Ideas in the Mind of God, God's Perceptions, or the Universal Mind. These approaches all assume

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that fundamental reality is to be understood in informational rather than physical terms. The central role of mathematics in modern and contemporary science has led some contemporary thinkers to advocate the concept of mathematical foundations underlying the entire physical world, in line with the perspective of realism regarding mathematical structures. This line of thinking led to the *Mathematical Universe Hypothesis*, first formulated by Konrad Zuse (Zuse, 1970) and later developed by Max Tegmark. (Tegmark 2014, 243-271) This hypothesis states that all physical reality can be understood as a computable, mathematical structure. Ultimately, this hypothesis evolved into a *pancomputationalist* account, which posits that the essence of any physical system can be defined as a computation. (Anderson & Piccinini, 2018, 2024) However, the concept of a mathematical-informational foundation for the universe has become a dominant one with the advent of computer science, the development of computer and programming science, the growth of a rich digital ecosystem, and the emergence of AI-based applications. In practice, the physical world is today doubled by a digital, technologically realized world, a world in which experienced entities, even if they are only simulated entities, are attributed a reality as consistent as that of physical entities. This has given rise to two kinds of problems in the arena of philosophical investigation: on the one hand, the epistemological problem of the extent to which we can know anything certain, given that as epistemic subjects we would only have access to physical simulations of informational patterns; on the other hand, the metaphysical problem of the nature of the reality in which we live as human beings: does external reality have its consistency, or is it merely a simulation?

The aim of this investigation is not to examine metaphysical idealism or the realism of mathematical structures. Rather, it will assess the potential of some philosophical thought experiments, derived from the famous Cartesian evil genius hypothesis, to help clarify some epistemological and metaphysical problems. These experiments assume that physical reality can be, or has been, simulated by a (possibly omniscient) programmer. It is argued that such experiments can provide us with theoretical tools to either overthrow global skepticism, shake our confidence in the doctrine of metaphysical realism, or both. To this end, the brain-in-the-vat argument as formulated by Hilary Putnam, and the simulation argument as formulated by Nick Bostrom (and developed by David Chalmers) will be briefly evaluated. Philosophically, it can be argued that any argument that refutes global skepticism or weakens metaphysical realism represents a significant theoretical advance. Finally, it can be argued that, despite their impressive nature, the philosophical results of these thought experiments are relatively modest. The simulation hypothesis and simulation realism can be seen as consequences at the level of philosophical

conceptualization of the discovery and widespread adoption of new technologies such as the Internet, virtual worlds, and artificial intelligence. However, even if these new forms of conceptualization offer a new strategy for rejecting global skepticism and metaphysical realism, they do not offer any significant solutions to the problem of the nature or foundations of external reality.

1. Reality as a conceptual simulation.

The modern adventure of mind experiments that present the external world to us as a simulated world begins with the Cartesian evil genius hypothesis. Descartes does not suggest that such a demon exists, nor that the world is essentially a simulation, a trick of an evil genius; but the mere possibility of a demon capable of manipulating our perceptions of the external world and our own body would be enough to raise a serious question mark about the performances of an epistemic subject. Since we cannot determine for sure whether or not we are being deceived by an evil demon, we cannot rule out the possibility of the action of an evil demon. So, to know something with certainty, we must exclude the possibility of the existence and action of an evil demon. But as Descartes shows in the *Second Meditation*, the knowledge of one's own existence escapes the skeptical conclusion, for if I am constantly deceived, there must be an "I" that is deceived. So, "this proposition: 'I am, I exist,' whenever it is uttered by me, or conceived in the mind, is necessarily true." (Descartes 2008, 18) Thus, even the postulation of an evil genius capable of completely disrupting the perception of the external world is not enough to make us doubt our existence; the truth of the proposition I exist is enough to understand that the Self and, ultimately, the external world are not diabolical simulations. In the end, Descartes solves the problem of skepticism: from the fact that I can clearly and distinctly conceive that I exist, it necessarily follows that we can know something with absolute certainty; therefore global skepticism is nonsense.

The hypothesis of the simulation of the external world, launched by Descartes' hypothesis of the evil genius, made a spectacular comeback in contemporary philosophy with the famous "brain in a vat" argument formulated by Hilary Putnam in his book *Reason, Truth, and History* (1981). This time, the American philosopher's stakes were epistemological (the undermining of skepticism, but also the correspondence theory of truth), but also had to do with the theoretical undermining of metaphysical realism, the idea that the world and truth exist beyond what a human epistemic subject can conceive and think. The argument is presented as a science fiction experiment, an experiment that was later artistically exploited in the

film *The Matrix* (1999). Let's imagine that we are the victims of an evil scientist who has subjected us to a macabre experiment: our brains have been removed from our bodies, placed in a vat, and kept artificially alive. All the nerves that reach the brain are connected to a supercomputer that provides the nerve impulses needed to generate the experiences we have in everyday life. Everything that happens to us seems normal to us, but our whole experience would be nothing more than a consequence of electrical impulses. The diabolical scientist can make his victim experience any event by altering the computer program or issuing different commands. (Putnam 1981, 6) Putnam suggests that we can extend this experiment and imagine that each individual is nothing more than a brain in a vat. The question is whether a brain in a vat can know that it is just a brain in a vat. Of course, Hilary Putnam also wants to raise the issue of skepticism about the external world, but that is not his ultimate intention; his ultimate aim will be to deal a blow to traditional metaphysical realism and replace it with his version of realism, internal realism.

In brief, Putnam's solution to the problem raised by this argument is as follows: "In fact, I am going to argue that the supposition that we are actually brains in a vat, although it violates no physical law, and is perfectly consistent with everything we have experienced, cannot possibly be true. *It cannot possibly be true*, because it is, in a certain way, self-refuting." (Putnam 1981, 7) Why should the hypothesis formulated by this thought experiment be self-contradictory? Putnam's answer goes something like this: even if people who are just brains in a vat can think and 'say' everything we might think and say, they still cannot mean what we mean. In other words, these people cannot think or say that they are brains in a vat, even if they say something like 'we are brains in a vat.' (Putnam 1981, 8) Why can't I think that those people are brains in a vat? Because, says Putnam, they can't refer to anything external, so they can't think and say that they are brains in a vat. (Putnam 1981, 10) "Our talk of apples and fields is intimately connected with our nonverbal transactions with apples and fields. There are language 'entry rules' which take us from experiences of apples to such utterances as 'I see an apple' (...)." (Putnam 1981, 11) In other words, when a brain in a vat says the word "apple" or "tree", it is not really referring to apples and trees. "One cannot refer to certain kinds of things, e.g. trees, if one has no causal interaction at all with them, or with things in terms of which they can be described." (Putnam 1981, 16-17) In other words if you can say that you are a brain in a vat, and the expressions you use have the same meaning as those of any other speaker, then it follows that you are not a brain in a vat.

The effectiveness and validity of this argument have been questioned in many ways: The argument has been accused of circularity (to show that we are not brains in a vat, Putnam appeals to the concept of

external reference, which already assumes that we have real contact with the external world); the argument has been criticized for being based on a poor, one-dimensional theory of the meaning of concepts (the argument is based on the idea that the meaning of concepts is formed only through causal interaction with objects or fragments of the external world; In fact, many words acquire meaning through cultural conventions or interpersonal interaction); the argument has been criticized for not being sophisticated enough. (Putnam could be talking about a brain that has simulations among its memories, including those that relate to real interactions with the external world), etc. Despite these possible objections, I think the argument has undeniable epistemological and metaphysical consequences.

As I said, the point of the brain-in-a-vat argument is to show that metaphysical realism is compatible with a form of global skepticism that is epistemologically unacceptable; by rejecting global skepticism, one would ultimately reject metaphysical realism. Thomas Nagel has noted the close connection between the realist perspective and skepticism: "The possibility of skepticism is built into our ordinary thoughts, in virtue of the realism that they automatically assume and their pretensions to go beyond experience." (Nagel 1986, 73) If metaphysical realism understands the world as a fixed set of states of affairs independent of any mind, then there can be a complete and true description of the way the world is. But this true description of the world is not the result of an epistemological performance by a subject, but the result of a correspondence between propositions and things, without any human mind being involved in this game. In other words, there is a pre-existing world and a definitive description of it, regardless of whether there is an epistemic subject capable of ascertaining or asserting this. This kind of characterization of the world is accepted, implicitly or explicitly, by various realist, materialist, or physicalist philosophers. They claim that the world is independent of human language, classification, and conceptualization. But if the world is independent of any human conceptualization, it is possible to imagine a scenario in which a brain in a vat constructs accurate epistemic grounds and justifications for a set of opinions without reference to the world, despite believing otherwise. If metaphysical realism is indeed a valid philosophical position, then it necessarily follows that global skepticism is also a valid position. This is because metaphysical realism allows for the possibility that a subject who is not directly connected to the phenomena of the world can develop well-founded opinions about the world. However, if the subject is not connected to the world, it is unable to form accurate opinions about the world that are properly founded. It is therefore imperative that we consider the possibility that our opinions about the external world may be mistaken, despite their intrinsic soundness. Consequently, if we accept that there is no correlation between truthfulness and a subject's epistemological endeavors,

a doctrine tacitly accepted by metaphysical realism, then all the subject's epistemic opinions, including those that are well-founded from his point of view, are incapable of accurately representing the world in its actual state. Consequently, to reject global skepticism, it would be necessary to abandon the tenets of metaphysical realism.

From Lance P. Hickey's perspective, the brain-in-a-vat scenario represents a particular manifestation of this pervasive global skepticism. It depicts a scenario in which all our beliefs about the world are susceptible to being false, even if they appear to be well-founded. Consequently, if it can be demonstrated that humans cannot be brains in a vat, then it can be inferred that metaphysical realism is invalid. Or, to present this in a more systematic format, Lance P. Hickey offers the following line of reasoning:

1. If metaphysical realism is indeed a valid philosophical position, then global skepticism is a logical consequence.
2. If global skepticism is a possibility, then the hypothesis that we may be a brain in a vat can be considered.
3. But we cannot be a brain in a vat.
4. Therefore, the philosophical position of metaphysical realism is false.

In the context of Putnam's philosophy, the brain-in-a-vat argument is not a plea for an understanding of the world as a reality simulated by an evil agent or an omniscient Programmer. Rather, it is a tool used to denounce the idea that reality is a fixed collection of objects to which only one true description corresponds, regardless of what one epistemic subject or another thinks. In contrast, Putnam's internal realism posits that while empirical inputs shape our understanding of reality, they are in turn inherently shaped by human concepts and vocabularies. These conceptually biased inputs are therefore superior to the absence of inputs. Furthermore, Putnam claims that human objectivity and perspective are superior to the divine eye perspective presupposed by metaphysical realism. This latter perspective is fundamentally inaccessible to an epistemic subject. In other words, the reality that we humans can enjoy is a reality of human objectivity and rationality. The idea of a pure reality, uncontaminated by our concepts or vocabularies, is a flawed philosophical idea that leads to global skepticism. In Putnam's words, "but a sign that is actually employed in a particular way by a particular community of users can correspond to particular objects within the conceptual scheme of those users. 'Objects' do not exist independently of conceptual schemes. We cut up the world into objects when we introduce one or another scheme of description." (Putnam 1981, 52) In conclusion, if reality is a construct shaped by our conceptual vocabulary and schemata, then reality can only be experienced as a human conceptual and linguistic simulation. Accordingly, Putnam posits that external reality is, at its fundamental level, an intricate and enigmatic

simulation, a transparent simulation, a simulation with a texture in which sensory inputs and concepts are interwoven to the point of indistinguishability, in which sensory inputs are shaped by the constraints of human language.

2. Physical reality understood as simulation.

If Putnam did not use the brain-in-a-vat argument to suggest that the physical or social world is objectively a simulation, but only to reject metaphysical realism because it would imply global skepticism, the Swedish philosopher Nick Bostrom has constructed an argument, the simulation argument that tests the credibility of this hypothesis, which blatantly contradicts common sense. The most articulate form of this argument can be found in Nick Bostrom's 2003 article *Are You Living in a Computer Simulation?* Here he asks whether the physical and social worlds are not more like simulations in a computer than autonomous, original realities, and what the possible answers to this question might be.

In the introduction to the article, Nick Bostrom elucidates the fundamental tenets of his approach. Many predictions made by eminent techno-philosophers and futurologists indicate that the computing power that will be available in the future will be significantly greater than that which is currently available. Even the computing power that is currently available is not to be overlooked. The advent of quantum computers or those constructed from nuclear matter or plasma could potentially lead to the overcoming of the current limitations of computational power. If this prediction is indeed accurate, one potential use of these advanced computational capabilities could be to conduct comprehensive simulations of historical societies or individuals. Such simulations could be driven by a range of motivations, including scientific, artistic, or religious pursuits, or even for purely recreational purposes. The sheer computational power of these future computers would allow for the parallel execution of numerous such simulations, greatly enhancing the scope and complexity of the simulations that could be conducted. It is evident that a comprehensive replication of the physical world is unnecessary; instead, a simulation that is sufficiently realistic to avoid any irregularities or discontinuities is sufficient. Let us posit that these simulated humans are conscious. This would be the case if the simulations were sufficiently fine-grained and if the assumption of substrate-independence of consciousness were correct. This assumption is a tenet of the philosophy of mind and posits that consciousness is not an essential property of neural networks based on carbon in biological skulls. It is therefore possible that consciousness could be implemented on silicon-based processors inside a computer, which could perform the same functions. It may therefore be posited that the overwhelming majority of

minds, including our own, do not belong to the original race, but rather to humans that have been simulated by advanced descendants of an original race. If this hypothesis is correct, it would be rational to conclude that we are probably among the simulated rather than the original biological minds. This is also because the number of possible simulations could in principle be much larger than the number of real physical worlds, which means that the probability of our existence in a simulation is much higher than that of our existence in the real world. However, if we do not accept the premise that we are currently residing in a computer simulation, there is no reason to believe that our descendants will engage in the creation of numerous such simulations of our ancestors.

The conclusion proposed by Nick Bostrom is based on several hypotheses that are either probably or open to discussion and do not take the form of a definitive assertion. The article's conclusion presents three exclusive disjunctives: either (1) the human species will become extinct before reaching a "posthuman" stage, or (2) a posthuman civilization will not undertake a significant number of simulations of their evolutionary history (or variations of it), or (3) we are almost certainly living in a computer simulation. It can therefore be concluded that the hypothesis that there is a significant chance that we will eventually become posthuman entities engaged in the simulation of our evolutionary history is almost certainly false unless we are already living in a simulation. Bostrom does not assert that one of these conclusions is more probable than the others; rather, he posits that one of them must be true. However, according to Bostrom, the possibility expressed by alternative (3) is the most philosophically intriguing. If we live in a simulation, then the observable cosmos is only a small part of the totality of physical existence.

The physical laws that govern our observable universe may or may not align with the physical laws that govern the universe in which the computer executes the simulation of our observable universe. The world we see is "real" in a sense, but it is not at the fundamental level of reality. Simulated civilizations can become post-human. Subsequently, they can run simulations of their ancestors on the powerful computers they construct within their simulated universe. Such computers would be classified as "virtual machines," a fundamental concept in the field of computer science. Virtual machines can be constructed in a hierarchical manner, whereby one machine can simulate another, and so on, in a multitude of iterative stages. The continued creation of simulations of ancestors would provide compelling evidence against (1) and (2), leading to the conclusion that we are indeed living in a simulation. Furthermore, it would suggest that the posthumans who run our simulation are themselves simulated beings and that their creators may also be simulated beings. What are the philosophical

implications and potential benefits of this science-fiction thought experiment?

Firstly, the experiment may serve to indicate that reality may be constituted by multiple levels and greater complexity than that which is typically accepted by physicalist philosophers. Nevertheless, a compelling counterargument to this perspective on reality as a multileveled simulation is that, as Bostrom has argued, simulating even a single posthuman civilization could be prohibitively expensive. Therefore, it seems unlikely that the world we live in would have been constructed intentionally with such a high level of complexity.

Secondly, David Chalmers posited that the simulation hypothesis should nevertheless be taken seriously, at least for statistical reasons. This is because, for every unsimulated person, there may be, in principle, thousands and millions of people who are simulated. The question thus arises as to how an individual can be certain that they are not themselves a simulated entity. Given the vast number of possible simulated beings, the probability of my being an unsimulated individual is low. Consequently, from a statistical perspective, it is more reasonable to conclude that we are in a simulation than that we are not.

Thirdly, the simulation argument should be treated with the utmost seriousness, as David Chalmers asserts in Chapter Two of *Reality+*. It is impossible to prove that we are not in a computer simulation. The rationale is straightforward: any evidence of conventional physical reality could be replicated through simulation. In principle, any phenomenon could be replicated in the finest detail. (Chalmers 2022, 20-42)

Fourthly, Chalmers posits that if we were to inhabit a simulation, the environment would be perceived as real to us as it is in the present. The world as we experience it would remain unaltered were we to discover that its basis or its ontological foundation was constituted by computational sequences rather than elementary particles. A world composed of bits and one composed of elementary particles would not differ phenomenologically; the experiences of the inhabitants of the two worlds would be identical. The only difference would be regarding the different metaphysical assumptions concerning the fundamental nature of reality. The simulation hypothesis does not affect our belief in the reality of the external world; however, it does prompt a more profound reflection on this topic. Ultimately, David Chalmers posits that the simulation argument represents a more profound inquiry into the nature of our knowledge about the external world. Our understanding of the external world is an understanding of its underlying structure, its logical or mathematical structure, according to Chalmers. Regardless of the scenario in which I find myself as an epistemic subject, I can conclude that there is an external world because I have access to an essential aspect of it, namely the logical-mathematical structure of the

world. This is in contrast to other forms of access, such as sensory experience, which may be inconsistent or illusory.

Fifthly, the simulation argument offers a valuable opportunity to rethink the foundations of reality in a context where physicalism is dominant. It suggests that reality may not be solely based on physical systems or processes. The simulation hypothesis, presented in the context of techno-philosophy, reveals a series of non-physicalist problems and solutions imbued with theological and religious nuances. The question is who or what entity is the creator of the simulation? One might inquire whether the programmer in question belongs to the next universe. It is therefore pertinent to inquire whether this programmer can be considered a deity of our world. It is therefore pertinent to inquire whether the programmer of the world can be considered to possess omniscience and omnipotence concerning our world. It is evident that, when these elements are taken into consideration, the hypothesis of the simulation can be situated within the ideational zone of creationism. This implies that the reality we perceive could not have emerged without the deliberate action of a designing agent. In his book *God, Human, Animal, Machine: Technology, Metaphor, and the Search for Meaning* (2021), Meghan O’Gieblyn outlines that if we conceptualize the cosmos as an immense computer, designed by a specific entity, the apparent order in nature becomes intelligible. This order has been programmed into the software that governs our universe and is therefore part of the digital fabric of our world. Furthermore, O’Gieblyn highlights the emergence of a theology of simulation, as evidenced by a multitude of academic articles written by proponents of this hypothesis.

Similarly, picking up an idea from the philosopher David Pearce, David Chalmers remarks that the “simulation argument is the most interesting argument for the existence of God in a long time.” (Chalmers 2022, 124) However, O’Gieblyn notes that even if the simulation hypothesis posits that our reality is a simulated one, it still fails to explain the genesis of zero-level reality. Furthermore, it is silent on the subject of the physical universe that would support the simulation of our world. In conclusion, the hypothesis is merely an exercise in imagination and does not provide an essential explanation about reality.

Sixthly, the simulation hypothesis may represent a sample of pseudoscience or a pseudo-philosophical problem, designed to stimulate the interest and imagination of some categories of intellectuals. This hypothesis does not solve any important problem of science or philosophy. In Chapter 5 of *Existential Physics* (Hoffenfelder, 2022), Sabine Hoffenfelder posits that the simulation hypothesis is perceived as increasingly attractive by individuals, regardless of their philosophical orientation, who possess limited knowledge of physics. Firstly, the physicist asserts that it is not the notion of residing in a simulation that is unscientific, but rather the

theological implications of this concept. These include the existence of a reality beyond the simulation and the idea of an omnipotent programmer who manipulates or contravenes the laws of nature. Furthermore, the argument is predicated on the flawed assumption that consciousness can be digitally simulated. However, there is currently no evidence to suggest that consciousness can be replicated in this way, nor is there any understanding of how it arises or how it could be technologically produced. However, Hoffenfelder identifies the most theoretically weak aspect of the argument as the assertion that sophisticated physical effects could be reproduced in detail using software designed by the Programmer. However, any individual with a correct understanding of physics is aware that the physical foundations of our reality cannot be replaced by anything else. Moreover, the mathematical and ontological incompatibilities between general relativity and the standard model of elementary particles proposed by quantum mechanics present a significant challenge in attempting to reproduce them in a single computer algorithm. It is not a solution to this problem to suggest that the algorithm will run on a quantum computer, which is a significantly more powerful computer. The construction of explanatory-predictive models for natural phenomena can be approximated on a computer using some laws of nature. Nevertheless, the complete simulation of all the laws of nature within a single algorithm remains an unfeasible theoretical undertaking. If this were feasible, it would entail deriving all the laws of nature from a single theory of everything. However, this remains a metaphysical aspiration rather than a tangible scientific position. Moreover, there are non-linear phenomena in nature, such as climate or weather, which, in principle, cannot be fully simulated by an algorithmic model. In conclusion, Sabine Hoffenfelder concludes that the simulation argument is not a scientifically tenable position: even if it is not necessarily wrong, it requires more faith and imagination than logic or physics to take it seriously.

And the famous physicist Frank Wilczek accuses the simulation hypothesis of being inconsistent and unjustified from the perspective of physical science on the structure of the world we live in: if we lived in a computerized simulation, we could not explain why there is a dizzying complexity of physical reality beyond what we perceive at the sensory level. The laws of physics have a lot of hidden complexity, and physical reality has invisible microstructures that would be of no use if reality were actually simulated. After all, if the reality in which we live is simulated, what laws would the reality in which our world is simulated obey? In other words, the simulation hypothesis would unnecessarily and inexplicably complicate the picture of the world by shifting the burden of physically explaining the world from the world we live in towards the reality in which our world is simulated. If we accept the consistency of the counter-arguments, we

should consider the simulation hypothesis to be a mere metaphor, a conceptual tool that allows us to reformulate some classical questions about the nature of reality. From the perspective of physicists, if we take this hypothesis literally, we run the risk of being perceived as irrational, adhering to techno-theological fundamentalism that is no more rational than other classical ideological or religious fundamentalisms that are unanimously abhorred today. Similar observations have been made by John Barrow, who notes that the multitude of complex effects resulting from the action of natural laws would be impossible and useless to reproduce in a simulated world. Furthermore, if we were to inhabit a simulated universe, the accumulation of programming errors should become evident to the inhabitants. But, this does not occur. (Barrow 2007, 483) At his turn, Paul Davies concludes that the simulation hypothesis is inherently flawed due to “the infinite tower of turtles” paradox. This essentially posits that for a simulation to exist there must be a programmer outside of it, who in turn must be programmed by an external entity, and so on. Furthermore, the hypothesis is untestable and rests on quasi-theological assumptions. (Davies 2007, 496-497)

Notwithstanding the reservations articulated by certain physicists concerning the simulation hypothesis, David Chalmers’ book, entitled *Reality+*, proposes that we accord it considerable attention. David Chalmers posits that there is sufficient evidence to accept that a virtual or digitally simulated reality can be considered a full reality in its own right. Rather than being regarded as fictional or fantastical representations of a non-existent reality, or as distortions of things that exist independently of the mind, the entities encountered in virtual reality (VR) are simply real, even if they have an underlying nature that differs from that of other things. The tables encountered in virtual reality are, in fact, real tables, albeit constructed of “bits and bytes” rather than the more traditional wood and metal. David Chalmers refers to this mode of conceptualizing the nature of reality as “simulation realism”. “In a perfect simulation, things are perfectly real. The same goes for other Cartesian scenarios, such as Descartes’ evil-demon scenario and Hilary Putnam’s brain-in-a-vat scenario. Generalizing simulation realism to these scenarios, we arrive at the no-illusion view vision of Cartesian scenarios.” (Chalmers 2022, 119) In other words, according to Chalmers, “the subject in Descartes’ evil demon scenario is not undergoing an illusion.” (Chalmers 2022, 122)

David Chalmers warns that the shift from the evil demon and brain-in-a-vat hypotheses to ‘simulation realism’ is not just a change of metaphorical packaging; he is convinced that there is a fundamental way in which the use of modern technology strengthens the argument. The simulation hypothesis may once have been a philosophical fantasy, but with accelerating technological progress it has become a serious hypothesis.

(Chalmers 2022, 53-54) After all, we know that VR machines exist; all Chalmers asks us to imagine is that VR machines will become far more sophisticated and powerful than they are now. So we will have to take seriously the idea that we live, or could live, in a perfect simulation indistinguishable from physical reality, not just as a tool for dismissing global skepticism, but as a distinct and legitimate metaphysical position.

Considering the simulation hypothesis, as well as Chalmers' ideas and analysis from *Reality+* on the possibility of perfect simulations of the world and interpersonal interactions in virtual reality, we can add at least two objections to those already raised against the simulation hypothesis (Bostrom's variant). The *first objection* concerns the possibility of constructing a general artificial intelligence. If a VR machine can indeed replicate all aspects of our experience, then it must also be able to replicate authentic conversations between people. To do this, it must solve the biggest problem facing AI research, the problem of Artificial General Intelligence (AGI). While AI machines have been able to demonstrate specific intelligence in well-defined tasks (e.g. chess or GO), no one has yet figured out how to create the kind of intelligence we have - general intelligence. Even if the problem could be solved in principle, no one yet knows what direction to take. (Larson 2021, 30-32)

The *second objection* concerns the possibility of technological reproduction of the phenomenon of consciousness. Simulation realism takes as true the position expressed in the hypothesis of the substrate independence of consciousness. According to this hypothesis, consciousness is not structurally bound to the carbon-based biological neural networks inside a skull: it could just as well be housed in the silicon-based processors inside a computer. However, this hypothesis is far from being confirmed or disproved while there is still heated debate about the true nature of consciousness. Moreover, no one has any idea how subjective experience, emotions, feelings, free will, and moral responsibility could be digitally simulated.

Conclusions

If we look at the different simulation arguments (Descartes, Putnam, Bostrom, Chalmers), we must admit that our sensory experience is largely compatible with either being deceived by an evil genius or being immersed and living in a simulated reality. This observation helped the four philosophers to construct arguments to achieve different ends. Descartes constructed an argument against global skepticism, Putnam argued against skepticism and in favor of metaphysical realism, Bostrom argued against the physical foundations of the world we live in and in favor of a mathematical-informational foundation of the world, and Chalmers argued in favor of a

realism of simulation. If the arguments of simulation constructed by Descartes and Putnam are to be understood in a methodological key, as provisional elements necessary for the elimination of global skepticism and metaphysical realism, then for Bostrom and Chalmers the hypothesis of simulation implies a distinct, consistent metaphysical position; they even believe in a realism of simulation. Understood in a methodological key, the arguments of Descartes and Putnam proved fruitful. From a metaphysical perspective, the arguments of Bostrom and Chalmers have not solved any of the existing problems concerning the nature of reality; it is true that they have provoked much discussion and raised many questions, but they have not provided pertinent answers. These arguments have prompted us to consider alternative foundations of the physical world and to postulate the existence of a God-programmer. However, they have not yielded any conclusive answers. The roots of these speculative discussions are the realism of simulations in VR and the theoretically high probability that humans are simulated rather than unsimulated. Nevertheless, the feasibility of realistic simulations in VR does not necessarily imply that our actual reality is, in fact, a simulation. It is an argument based on analogy. No epistemic logic can be invoked to justify this claim. Similarly, it is not possible to infer from the hypothetical possibility that humans can be simulated that we are, in fact, simulated. Similarly, one might posit the plausibility of the hypothesis that humans are illegitimate sons of Zeus or that we are angels banished from heaven. Nevertheless, such reasoning would be regarded as implausible by experts in genetics or metaphysics.

On the other hand, beyond the imagination of the philosophers who support it, the simulation realism hypothesis does not have sufficient reason on its side: it is not supported by any empirical or natural scientific evidence (moreover, we have found that physicists credibly argue that the detailed physical structure of the world we live in is incompatible with the simulation hypothesis), it legitimizes skepticism about natural science (if we really live in a simulation, what value and how much truth do the results of natural science contain), it explains nothing about the reality outside the simulation in which we live, it does not explain anything about the nature or intentions of the programmer who would have simulated the world in which we live, it violates Occam's principle of simplicity by postulating an unnecessary complexity of simulated worlds that exist in other worlds, it cannot explain the existence of defining characteristics of human beings (conscience, emotions, free will, altruism, moral responsibility), it cannot justify the existence of crimes and wars in our world.

From my perspective, the simulation hypothesis and simulation realism can be seen as the philosophical consequences of the discovery and widespread use of new technologies, including the Internet, virtual worlds, and artificial intelligence. The new technologies have always had the power,

at the level of the imaginary, to be close to magic, and have been seen as a legitimate source of metaphors that have served to approximate solutions to as yet unsolved scientific and metaphysical problems: consciousness, the brain, the world as a whole, God. The simulation hypothesis and simulation realism have the merit of making accessible to educated people of the 21st century several classical problems of philosophy (the problem of the foundations of reality, the possibility of the existence of a creator, the possibility of reliable knowledge, the problem of the nature of man, of consciousness, etc.) in terms and with the help of metaphors with which they are familiar. It seems probable that as the novelty of these new technologies (Internet, VR, AI) fades and the relevance of the meanings proposed by the metaphors generated by these technologies in the philosophical arena become less significant, the minds of thinkers will seek to invoke other suggestive metaphors generated by the technologies that which will capture the imagination of future generations.

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