Galit Wellner

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FUTURES OF REALITY.
VIRTUAL, AUGMENTED, SYNTHETIC

GALIT WELLNER

1. NOZICK'S EXPERIENCE MACHINE

In 1974, Robert Nozick published his book *Anarchy, State and Utopia,* in which he described an interesting thought experiment:

> Suppose there were an experience machine that would give you any experience you desired. Superduper neuropsychologists could stimulate your brain so that you would think and feel you were writing a great novel, or making a friend, or reading an interesting book. All the time you would be floating in a tank, with electrodes attached to your brain. Should you plug into this machine for life, preprogramming your life's experiences? (Nozick 1974, 42)

For Nozick the question of wishing to enter into the experience machine is a rhetorical one and what is interesting is why the negative answer is so obvious for him. He provides several explanations, alternative and yet accumulative. First, living is not just a bare experience but also involves meaning, that is, we need to feel that we are *doing* something in the world. Second, because the experience machine provides pre-determined experiences, it does not enable us to understand who we *are*: Are we brave? Generous? Loving? This understanding is crucial, and its absence means that "plugging into the machine is a kind of suicide" (ibid., 43), according to Nozick. Third, the machine is limited to human-made reality and disconnects the user from the real world. It is like an "eternal nirvana" (ibid.), or like being under the influence of psychoactive drugs (ibid., 44), experiences that are both considered negative by Nozick.

Nozick ties all these negative strands together by concluding that "what is most disturbing about [experience machines] is their living of our lives for us" (ibid.). He stresses that to live is an active verb that requires causal relations with reality as well as free will. While one may agree on the active element of life, the causal relations and free will are less obvious to a contemporary reader who is familiar with postmodernist thought. But Nozick is a modernist, and so his negative sentiment toward the experience machine should not come as a surprise. We can position his thought experiment as a descendant of Plato's *Allegory of the Cave* that prefers the *real-world* experience over the mediated one and regards the mediated experience as much poorer. The experience machine can in turn be seen as a predecessor of Virtual Reality (VR) technologies that create synthetic

experiences, and today, Nozick's arguments against using the experience machine are being brought against VR technologies (see Cogburn and Silcox 2013).

Nevertheless, contemporary VR technologies provide more than just an *alternative* to reality, as originally suggested by Nozick's thought experiment. Some versions of them also offer *links* to reality. One recent development came in October 2021, when Facebook renamed itself Meta and laid out its vision for the metaverse, defined as "[a] digital world, in which users will feel they are with one another and have a 'sense of presence' despite being far apart" (Paul 2021). Labeling the metaverse as a digital world provides a strong connection to the hypothetical experience machine as it poses a human-made alternative to reality. Yet, it aims to connect people, thereby preserving an important aspect of reality, and it adds a digital aspect. The name *metaverse* follows the logic of the term *metadata* that adds data to an information item. Likewise, the metaverse aims to add data to the reality of inter-personal communication. The company stated:

> The metaverse will feel like a hybrid of today's online social experiences, sometimes expanded into three dimensions or projected into the physical world. It will let you share immersive experiences with other people even when you can't be together – and do things together you couldn't do in the physical world. (Meta 2021)

Like the experience machine, the metaverse aims to provide a synthetic experience that cannot be lived in the physical world. Unlike Nozick's thought experiment, the metaverse is aimed at connecting people and thereby *do*ing something in the world.

If we conduct Nozick's thought experiment today, in the age of the metaverse, the answers to his rhetorical question would probably be less decisive. Why did our answer change? What was the process through which we came to develop a new answer? In this article I suggest three genealogical steps beginning with postmodernism, going through posthumanism, and ending up in postphenomenology. The first step discusses Jean Baudrillard's simulacra; the second step focuses on N. Catherine Hayles' posthumanist approach to virtuality and materiality; and the third step is based on Don Ihde's postphenomenology and identifies new digital hermeneutic relations.

2. POSTMODERN SIMULACRA

In *Simulation and Simulacra* ([1983] 1994), Baudrillard provides a model to analyze media technologies that turns out to be useful when thinking of the relations between VR and reality, although VR technologies were not widely available in his day. His model consists of three *orders*. Each signifies a step in the evolutionary path of our approach to reality, yet they all co-exist today.

The first order consists of "simulacra that are natural, naturalist, founded on the image, on imitation and counterfeit, that are harmonious, optimistic, and that

aim for the restitution or the ideal institution of nature made in God's image" (Baudrillard 1994, 121). The *natural simulacrum* can be understood as a truthful representation that imitates reality. Under such an order, it is important to identify the source or the origin of the representation, and hence the importance of originality for works of art. It makes a difference whether you hang on your wall an original Rembrandt or a poster depicting the artist's oeuvre. This order has been with us at least since early modernity and is still prevalent today, for example in journalistic news that promise to report on events as accurately as possible, or the promise made by video conferencing tools to display the interlocutors as they are.

After the order of representation comes the *productive simulacra*, characterized as "[…] productivist, founded on energy, force, its materialization by the machine and in the whole system of production – a Promethean aim of a continuous globalization and expansion, of an indefinite liberation of energy […]" (ibid.). This order refers to the representation of reality that is mechanically duplicated. It can be positioned as a late modern approach, rooted in philosophical works such as Walter Benjamin's classical essay *The Work of Art in the Age of Mechanical Reproduction* ([1935] 2010) where Benjamin analyzes machine-based representations, i.e., photography and cinema (he does not refer to recorded sound although the gramophone and other related technologies were already prevalent in his time). For these *simulations*, the source is not important (or at least its importance is dramatically degraded). Whereas Baudriallard's explanation tends to be cryptic, Benjamin is clearer and practically exemplifies the difference between the first and second simulacra by comparing theater to cinema. He writes:

> The artistic performance of a stage actor is definitely presented to the public by the actor in person; that of the screen actor, however, is presented by a camera […] the camera need not respect the performance as an integral whole […] [it] continually changes its position […] the sequence of positional views which the editor composes from the material supplied him constitutes the completed film. (Benjamin 2010, 25)

Even before Baudrillard, Benjamin had identified that the film is like a mutation of the representation and it no longer wishes to provide an exact copy, but rather allows ruptures and breaks. Likewise, the metaverse is not designed to provide an exact copy of reality, but rather a mutation in which the participants in a conversation are not necessarily presented as they appear in the physical world. Their avatars can be in (almost) any form and they can be viewed from (almost) any position that the user chooses.

Whereas Benjamin is focused on one moment in media history, Baudrillard continues to the next stage, that is, an intensification of the second simulacra, though this is accompanied by a further twist. The third order is the most complex and most *computerized*, defined as "simulacra of simulation, founded on in-

formation, the model, the cybernetic game – total operationality, hyperreality, aim of total control" (Baudrillard 1994, 121). This *simulacra of simulation* originates in the information age and can be regarded as somewhat unique to postmodernism. In this stage, the link between the reality and its representation is further loosened. Baudrillard wonders: "[I]s there an imaginary that might correspond to this order?" (ibid.) According to Baudrillard, what we experience is a hyperreality, as in the case of Disneyland, for example. He writes: "There is no real, there is no imaginary except at a certain distance" (ibid.). Thus, Disneyland is an attempt to produce an imaginary place that mimics another place which does not exist in the real world while giving the visitors a (false) sense of a real place. No wonder, then, that "the real cannot surpass the model – it is nothing but its alibi" (ibid., 122). A more up-to-date example would be the reality show known worldwide as *Big Brother*, where a group of people leave their everyday environments and enter a television studio designed like a home but without windows. They spend several weeks there and are filmed constantly. In some versions, they are referred to as members of a family. It is a simulacrum of home and family that is acknowledged as simulacra by everyone – participants, organizers, and audiences. Unlike Nozick's experience machine that attempts to provide a way out of reality through something that *feels like it is real*, the simulacrum has some faint relations to reality and does not purport to be *real*. It is a dramatically different relation to reality.

Such a simulacrum might be the goal of the metaverse as envisioned by Facebook Meta. If their goal is to provide a false sense of a real place, then the metaverse project can be held as an attempt to repeat the postmodern turn of the 1980s as described by Baudrillard. It seems that the goal is wider, and encompasses also *unreal* places. Although Meta's version of VR distorts and deconstructs Nozick's basically negative approach, it does not deviate enough from the experience machine. It still aims to replace reality with some synthetic version. A more updated attitude can be framed within a posthumanist schema, leading to a new understanding of VR.

3. POSTHUMANIST VIRTUALITY

Almost two decades after Baudrillard, Hayles outlined what can be considered the next stage, or at least an elaboration of the simulacrum, that she terms *virtuality*. She defines virtuality as "the cultural perception that material objects are interpenetrated by information patterns" (2000, 69). Unlike the conventional wisdom that contrasts between physicality and virtuality, Hayles combines materiality and information in a way that does not prefer materiality as Nozick does in his critique against the experience machine, nor does her approach prefer information over materiality as transhumanists and singularity supporters contend (ibid., 72–73).

Hayles emphasizes the importance of the body in VR experiences. She notes: "[I]t can be a shock to remember that for information to exist, it must always be instantiated in a medium" (ibid., 75). Hayles reminds us that the body cannot be forgotten in the analysis of VR and it plays an important role in the experience classified as *virtual*. Her approach practically challenges Nozick's thought experiment for ignoring the body. The problem with the thought experiment is the underlying assumption that the imaginary machine would take care of all the biophysiological needs, as these are redundant to the virtual experience. Such an assumption is central to the transhumanist vision and is heavily criticized by Hayles as unrealistic and unattainable.

Once the body is taken into account in the VR experience, it turns out that for VR to exist there must be dedicated equipment to provide it, equipment that Nozick vaguely termed the *experience machine*. The machine consists of computers, headsets and sometimes also sensors. What is most accessible to the users is the headset that produces visual and auditory sensations that are frequently framed as exact copies of reality. Yet reality involves additional senses that cannot be provided by this hardware: The sense of a crowded market on a hot, humid day, the smell of fresh bread and the smoothness of a silk shirt. It is much like pictures of dishes posted to Instagram that cannot convey the taste of the food.

Ignoring the body, or thinking it is a problem that needs to be overcome like the transhumanists do, leaves the analysis in its modernist stage of subject-object and presence-absence *dichotomies*. In the posthumanist stage, a more fruitful analysis would look to the *dialectics* of pattern-randomness, information-noise and matter-information (ibid., 76). This would mean that one cannot think of information without discussing materiality.

Hayles refers to virtuality not only as a complementary aspect of physicality but also and more fundamentally as an attribute of a period, typical for the beginning of the third millennium. It is an age that replaces that of postmodernism. Whereas in postmodernism the defining dialectic is of presence/absence, in virtuality it is pattern/randomness. Hayles explains:

> When information is privileged over materiality, the pattern/randomness dialectic associated with information is perceived as dominant over the presence/absence dialectic associated with materiality. The condition of virtuality implies, then, a widespread perception that presence/absence is being displaced and preempted by pattern/randomness. (ibid., 78)

From this perspective, we can diagnose that Nozick is bound to the presence/absence dichotomy, and hence cannot help himself from criticizing the state of absence. Hayles' model explains why his experience machine may look obsolete and grounds it in the two intellectual transformations that we discussed – from dichotomies to dialectics, and from presence/absence to pattern/randomness.

Next, she identifies differences between the regimes of virtuality and postmodernism in the ways they become "integrated into capitalism" (ibid., 79): Whereas postmodernism is limited by *possession*, virtuality seeks to break way by looking for *access*. For Nozick it is natural to speak in terms of having something, but in the state of virtuality we are more interested in the question of obtaining access to certain contents (see Deleuze 1992). Another difference lies in the "psychological crisis" (ibid.) moving from postmodernist *castration* to virtuality's *mutation*. This difference can explain why Nozick feels that he is losing something important when entering the experience machine, and by contrast why users of VR headsets frequently feel curious about the virtual space they enter, and why they are likely to expect some personalization, i.e., mutations.

In the age of the metaverse and online meetings via video conferencing applications such as Zoom, the question of presence/absence loses its importance and instead the pattern/noise dialectic gain momentum (e.g., in identifying spam, cyber-attacks etc.). What is also vanishing is the question of ownership being replaced by the question of access to data repositories, advanced algorithms, online events, or virtual gadgets. Even smart devices that are bought and owned (like smart phones and smart thermometers) are dependent on access to data, conditioned by the users' willingness to give up their privacy (see Zuboff 2019). Lastly, the psychological crisis of virtuality in the form of mutation is more dominant than that of castration in light of the growing threat of being the subject of deep fake images and videos.

4. DIGITAL HERMENEUTIC RELATIONS

The third and final genealogical step to be discussed here refers to contemporary augmented reality (AR) and mixed reality technologies. Whereas Nozick's experience machine and VR technologies wish to fully replace reality, AR has a humbler mission as it attempts to add layers of information to the real world. AR remains *in the world* and enhances it. Lev Manovich defines AR as "the layering of dynamic and context-specific information over the visual field of a user" (2006, 222). By adding textual, auditory and visual layers of information, a new space emerges that Manovich calls the *augmented space*. It is a "physical space which is 'data-dense', as every point now potentially contains various information which is being delivered to it from elsewhere" (ibid., 223). The result is correlations between the virtual and the real, and a mix of real objects and "augmented objects" (Liberati and Nagataki 2015). This is very different from Nozick's experience machine as one does not need to leave the world in order to undergo the desired experience.

To understand the effect of AR technologies on the perception of reality, I turn to postphenomenology, which is a branch of philosophy of technology that studies how technologies mediate the world for us (see Ihde 1990; Verbeek 2005). In my work, I analyzed AR with the postphenomenological analytical tool

of the I-technology-world formula (see Wellner 2013; 2020b). The formula represents the various ways in which technology mediates the world for humans (see Ihde 1979; 1990). Technology can function like a part of our body, thereby altering our body schema. These are embodiment relations and they are represented as: (I-technology)→world. Technology can also be part of the world, and using it means we read and interpret the world through the technology. The interpretation element led Ihde to name these relations hermeneutic relations, and the formula is: I→(technology-world). A third type of relations conceptualizes the reference to technology as a quasi-other with which we maintain a dialogue, be it a simple conversation as in the case of an ATM or more *natural* dialogue as in the case of bots like Siri and Alexa. These are alterity relations and the formula is: I→technology(-world). Lastly, the technology can recede to the background and maintain background relations with us in which its operation and even presence are unnoticed, as in the case of electricity and internet connection. This formula is: I→(technology-)world.

VR and AR technologies interact with the users' body and encourage the users to refer to the technological artifacts as part of their body (Wellner 2020a). At the same time, these technologies are also experienced as part of the world they construct, thereby matching the hermeneutic relations framing. When the hardware elements do not function according to the users' expectations, those elements might become participants in alterity relations (similar to dolls and idols), but when everything goes smooth, they are likely to be classified as maintaining background relations in which they withdraw to the background and become unnoticed.

The differences between VR and AR can be conceptualized in terms of hermeneutic relations in which the technology and the world are experienced as a unified entity, and the world is read and interpreted through the technology. Whereas in VR the media attempts to replace the world, in AR "the world remains as it is, but it is augmented by the information […]. The information is not just information about the world, it is part of the world" (Wellner 2020b, 175). AR can be regarded as a development of Hayles' dialectics of information and materiality. The postphenomenological perspective allows us to perceive the difference between AR and VR and locate it in terms of how such a reality relates to the world: VR aims to create an imaginary world that should not be considered real, while AR seems to show the world *as is* and adds layers of information on it that will assist in interpreting it. That is why in AR it is important to connect the pieces of information to the right image of reality. Think of an application that provides the names of stars that we see at night. It is important to show the name near the correct *corner* of the sky.

The concept of hermeneutic relations leads us to realize that there is an interpretive element in the technology so that these layers are never neutral nor intuitive. We learn how to read the world through them, and when we acquire the necessary skills, we are even able to spot the interpretations and biases imposed

on us. Hermeneutic relations remind us that technologies add a layer of meaning, and that meaning changes according to place, time, politics etc.

But this is not enough to fully appreciate the experience provided by AR technologies. An additional understanding is offered by Peter-Paul Verbeek and his notion of composite intentionality (see Verbeek 2008). When a technology expresses *composite intentionality,* new relations emerge in which not only the human participants convey their intentionality. The more our technologies become *intelligent*, the more intentionality they have. In these relations, the formula is updated by replacing the hyphen between *technology* and *world* by an arrow. The arrow that so far designated human intentionality now also represents the technological intentionality: I→(technology→world).

This form of relations is relevant to AR in which intentionality is practiced not only by humans but also by the technologies they use. My example for this kind of relations is a navigation app where the display of the map functions as the basic layer of reality over which additional information layers are displayed, indicating other cars, traffic jams, police radar (for speed detection) etc. as well as marking the route to the destination (Wellner 2020b). "The directions and suggestions may change the original route so that the driver's intentionality is not as 'pure' as driving without the app and its recommendations" (ibid., 178). Moreover, "[t]he decisions that drivers are taking cannot be understood with the classical tools of 'subjectivity-objectivity', 'free will', or 'autonomy'" (ibid.). Free will was important for Nozick in determining why the experience machine is not desirable (to say the least). But for Nozick, free will ended once one entered the experience machine. In AR, the free will is to be activated and re-activated from moment to moment: Should I obey the recommendation to make a detour to avoid a traffic jam down the road that I cannot see? Should I slow down because there might be a speed trap ahead?

The analysis is further complicated by the addition of artificial intelligence (AI) to AR, offering enhanced personalization, and additional diversity in the content of the layers. The free will is further diminished as our intentionality would turn into "relegation" (Wellner 2020b). It is a form of intentionality that is dominated by technologies, that is – forcing the user to obey. Thus, the formula uses a reverse arrow that points *to* the user: I←(technology→world). In this new type of relation, some parts of the reality might be hidden by colorful layers of augmented objects thereby controlling our gaze as well as "the parameters for significance" (ibid., 184). It is a reality in which some activities are dictated by an algorithm (as already happens to workers in robotic warehouses and gig-economy platforms) where employees need to abide by the logic of the algorithm even for very basic human activities like going to eat or to the toilets. Nozick's thought experiment does not go that far. It stops at the entrance to the machine and does not allow for any free will inside.

As discussed above, it is difficult to assess the metaverse as VR because it is not purely virtual in the modernist sense, as it enables real interaction with real

people (albeit also interaction with non-real entities, i.e., bots). Nor is the metaverse pure AR because it does not purport to present reality. I would like to suggest here that the metaverse can be understood as a *reverse AR* that adds reality to the virtual as it involves interaction between real people within a virtual space. Even though it reverses the components of AR so that the reality becomes virtual and the layers of other participants can be real, the critique expressed above is still relevant. There is still a risk in the non-neutrality of the virtual elements, there is still a need to reactivate our free will moment after moment, and there is still a risk of relegation that the human intentionality will be taken over by Meta's background algorithms.

5. SUMMARY

This article starts with Nozick's modernist argumentation against VR and asks why and how this negative stance has changed. To begin with, the technology has changed, and what was considered science fiction became reality, though no experience machine has been built so far. In this article I accompany the technological change with some theoretical developments organized in three genealogical steps. Firstly, Baudrillard realized that *the cybernetic game* has become foundational, and that information technologies play an increasingly dominant role, resulting in *total operationality* and *hyperreality*. He shows how reality itself changes as the border between real and fiction blurs, calling this *simulacra of simulations*.

In the second genealogical step, Hayles contributes to the distortion of distinctions between reality and fiction with a new conceptualization of virtuality that combines with materiality. Her analysis reveals a major flaw in Nozick's argument – the reference to the body as redundant, as a burden or a limit on the path to the ultimate experience. This is a transhumanist approach to technology that does not take into account the human body. She adds that moving from the presence/absence dichotomy to a pattern/noise dialectic reveals the growing importance of access to data and the decreasing importance of ownership, as if predicting the rise of the sharing economy. No less important is the move of the collective anxiety from castration to mutation, as if predicting the rise of deep fake. Her posthumanist approach (not to be confused with transhumanism!) is based on the blurry distinction between subject and object (Latour 1993), revealing how Nozick was very modernist in his approach.

The third genealogical step analyzes the move from VR to AR, leading to an even more intensified blurring of the distinction between reality and fiction. AR technologies lead to a synthetic reality that does not require users to "be floating in a tank, with electrodes attached to your brain" (Nozick 1974, 42) as Nozick described. On the contrary, we are embedded in the world, but the reality around us changes. The rise of these new technologies has led to an expansion of the postphenomenological relations as originally framed by Ihde, toward relations in which the technological intentionality intensifies. The most recent development

is that of a relegation relation in which the human user is subjected to the power of the algorithm. At this point Nozick's critique regarding the lack of free will in the experience machine should be expanded from the entry stage to the usage phase, which is much longer. We need to find new ways to maintain our free will when we interact with VR, AR, the metaverse and any technology that involves AI. This is the challenge for humanities and social sciences for the twenty-first century.

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