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Liminal Thresholds: Perception and Imagination under the Reign of Virtuality: A Phenomenological Approach

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Abstract

The inquiry that drives this article addresses the human need to understand how perceptual experience and interaction with images change with the transition from an analog mediation of reality to types of digitally mediated experiences. The purpose of this proposal is to investigate how human understanding of one's own corporality (cerebral/neurochemical, psycho-somatic) expands at both endosomatic and exosomatic levels, as well as the exteriority in general (surrounding environment, other human or non-human individuals, objects, processes) with the emergence of liminal experiences of reality. In this context, liminal refers to boundary spaces between a world offered to be perceived and the consciousness of the one perceiving it, experiences that blur a clear delimitation threshold between what lies outside the perceiver and what is within their own neurochemical, biological, psycho-somatic constitution. The methodology employed in this endeavour will be that provided by applied phenomenology, analysing those permutations in the realm of perception and imagination that arise with the new experiences offered to humans by virtual technologies. A critical revisit of the phenomenological pioneers (Husserl, Fink, Merleau-Ponty) will be conducted, observing how they anticipate the process of blurring the sharp distinctions between reality thresholds, so that the binaries delimiting between real-virtual/fictional or actual-passive hybridize through various technologies that no longer allow us to defend the assumption that human experience of reality is either unmediated or solely mediated by the epistemological instruments of the brain. The concept around which this research is built is that of virtuality, starting from analyzing how Husserlian phenomenology, alongside post-Husserlian phenomenology, describes perception, imagination, presentation and presentification, and image-consciousness. Then, we will question the ontological state of virtuality, drawing on Bergson's and Deleuze's perspectives on the reality of the virtual. We will observe how the understanding that traditional phenomenology provides of virtuality changes with the emergence of the possibility to live experiences with an advanced degree of technological mediation, using social media networks, gaming, and immersive technologies (AR, VR, MR) as applied case studies.

Keywords: perception, Husserl, virtual reality, phenomenology, Deleuze

Introduction

The question that drives this research targets the way the perceptual experience and the interaction between humans and images change over time, alongside the transition from understanding reality through analogic mediation towards the emergence of new types of digitally mediated experiences. By the term *liminal* we mean in this context those spaces of frontier between a world which is given to be perceived and the consciousness of the perceiver, experimentations that prevent the establishment of a clear delineating threshold between what is located outside the perceiver and what is located inside its own neurochimical, biological and psychosomatic constitution. We are reffering to the emergence of imersive technologies belonging to the spectrum of Augmented Reality and Virtual Reality.

Early as in 2003, in *The Virtual,* Rob Shields notifies the multitude of meanings that the concept of virtual or of virtuality can acquire, mentioning that ontology and epistemology research for ages the spectra of this concept, which was opposed to the concept of real or reality. Shields was advocating for surpassing the impermeable distinction between reality and virtuality, considering the fact that the Virtual exsists precisely for better understanding what means to be real and what are the spectra of reality. Since then the 3Ds arhitectural technologies, flight simulators or RPGs utilised data and sensory informations from physical world for consolidating a world-ensemble constituted by information (Shields 2003, 21). The perspective proposed by Shields proposes the need to go beyond the task of questioning the reality of virtual, announcing the need to construct a new extended theory of reality that will include the virtual and the concrete as two distinct type of real (Shields 2003, 22).

We will utilise applied phenomelogy as a methodology for researching these permutations that occur within the sphere of perception and imagination, following the new experiences that virtual technologies are offering to humans. We will make a critical revision of traditional phenomenology, observing how Husserl and Merleau-Ponty anticipate the process of blurring the solid distinctions between thresholds of reality, in order

that the dualities which delineate between real and virtual/fictional or between actual and passive are hybridised by different technologies which don't let us to still mantain the assumption that the human experience of reality would be a non-mediated one, mediated at most just by the epistemological tools of the brain. We will notice how social media networks, gaming activities and immersive technologies (AR, VR, MR) extend right away the meaning of notion of experience, and extend implicitly the traditionals goals of phenomenology.

Virtuality becomes a way of living in itself. The Pandemics has raised our awareness of this fact, but since the emergence of the first personal computers and smartphones it was expected a dimming of the ontological distinction between real and virtual, or a virtualisation in extenso of human experience in futuristic, utopian or distopian scenarios. Today, maybe the best example of a life built around virtuality is the one of the life lived by professional gaming communities, that are spending on a daily basis an exponential number of hours training their skills and building international networks of virtual communications through platforms like Discord. Why phenomenology could help us understanding in a more concrete and dynamic way the practical, social, and moral implications of virtuality? Because of its analyitical focus on lived and sensed body (fr. *le corps vecu*), on affectivity and kinesthetics, but also because of its attention to the manner in which the lived experience is encompassed by the environment.

The stakes of a phenomenology of virtuality are not just descriptive, but could be as well ethical and political ones, utilising the individual experience of virtuality to infer what are the advantages and the moral menaces that virtuality can offer to contemporary communities.

This approach intends, in the first place, to give a phenomenological description about the experience of virtuality (in which way the objects appears in the perceptual field; what are the psychosomatic processes by which the subject targets these objects), and in the second place, to draw a possible response regarding the questions of the ontological status of virtual objects.

1. Perception in Husserl's phenomenology

Husserl (1918-1926, 3) indicates a possible paradox of perception: the external perception finds itself under the constant pretention of fulfilling a role that is not suitable for its nature. It is about the contradiction between an objective meaning given by the unity of intuition and a cluster of possible appearances and apparitions of a phenomenon. We are questioning about the way *the continuous synthesis, taken as a unity of coincidence, facilitates the apparition of a same meaning, and how a consciousness of an always new possibilities of apparition persists constantly against factual and limited streams of apparition.* The perception presents simultaneously the object in its totality, but the subject is aware of just a singular aspect (*Abschattung*) at a given moment. This aspect is known as *the problem of perceptual presence* (Alva Noë 2004, 59-65), in other words, we are reffering to the subject's capacity of having simultaneously the perceptual experience of a human figure that is regarded by the subject, but also the perceptual experience of the wall beneath that human figure. From a phenomenological point of view, the wall constitutes solely a secondary background of the perceptual experience. *In which consists the sense of presence of a detailed environment if not in the fact that we are seeing it* (Alva Noë 2004, 60) ? In this way we could describe the paradox of a perception which is aware also about details that are outside the field of focus. We are taking as example a perceptual experience which consists in holding a bottle in our hands while our eyes are closed. The sensation of the presence of the whole bottle exists, even if the contact is haptic, through few isolated points*: is the experience surpassing what is given or should be affirmed that the sensations of the bottle as a whole it's a kind of fabulation?* How could we sense the existence of an object or of a phenomenon in its integrality, although we are perceiving just an isolated point of it? In other words, *we are taking act of the presence of what, strictly speaking, we are not perceiving* (Alva Noë 2004, 60). A possible explanation could consist in the passage from a limited perception towards conceptualization, namely a logical formalisation: observing a cat's tail – the transfer towards the cat as a whole in the mind.

Taken on its own the explanation does not satisfy, because what is at stake it's not a description of the thinking, judgement or the belief that there exists a bottle taken as a whole, but a description of *the perceptual sense of its presence*. Prior to thinking that there is an object taken in its totality, the subject perceives the objects in a totalized way, even if the subject does not see it as a whole at once. In other words, the sense of perceptual presence does not depend on the *disponibility of a corresponding thought.*[1] A possible heuristic tool in order to resolve this paradox could be the enactivism, as an anti-representationalist theory of cognition which proposes a phenomenological methodology, where the cognition emerges as a process resulted from dynamic interaction between an active organism and its environment. When we see the tail of a cat hiding after the fence, the enactivist approach does not consider that the perceptual presence of the cat as a whole object take place through mental representation of it based on the perception of the tail, but rather through the accessibility given by its perception. The cat's tail give an perceptual access that make the whole cat to be *present in a virtual way* (Alva Noë 2004, 63). The basis of this accesibility consists in our possesion of sensory-motor capacities: if I blink the cat is out of sight in totality, if I move a few inches right I can observe besides its tail also its fur stickings through the fence. Our relation with what is exceeding the visual field is mediated by the dynamics of sensory-motor localisation: *the sense of presence of the whole cat or of the whole bottle consists precisely in my implicit knowledge and understanding t through a movement of the eye, head, bring in the visual field parts of these objects that for the moment are concealed* (Alva Noë 2004, 63-64).[2]

Two types of sensory-motor relations exist: a. movement-dependent relations, when the smallest movement of the body triggers sensory stimulation; b. object-dependent relations, when the movement of object produces sensorial changes. Generally in the moment when a subject perceives something X, the relation is mediated simultaneously by a dependence of movement and a dependence of object. We are taking as example the epistemic relation between us and the next chamber to that in wich we are sitting: this is not a

perceptual relation, because altough is dependent on movement, it is not dependent on object.

This problem of perceptual presence concerned Husserl for a long time, being one of the factors that facilitated the emergence of his theory of perception. We are presenting in the following lines the caracheristics of perception in Husserl: the perceptions is related to presence, namely the everyday external perceptions, belonging to the natural and naive attitude, by which a concrete physical object is given directly and immediately to us; what facilitates the originarity of perception is related to the fact that we are perceiving physical objects through external perception, but not when we move to the spectrum of memory or of a theological expectancy (Husserl 1913, § 1). Husserl (1898-1925, 101) operates with a distinction between perception and memory or expectancy, the latter two being nothing else than different types of *presentification* (ger. *Vergegenwärtigung*), and the former being the quintessential type of *presentation* (*Gegenwärtigung*). The perception is related to the present objects and things, which must be experienced as being real. *Perception makes that a present reality appears to us as being present and as being a reality* (Husserl 1898-1925, 4), in which the german term for reality is *Wirklichkeit,* refering in other places to the ideea of actuality, appearing that Husserl uses them in an interchangeable manner (O'Shiel 2022, 10). The actuality *or body, I can* refers to a system of an unmodified intentionality in an absolute way, the intentionality of *doxa* (opinion).

The belief or the opinion does not belong to the specifics of a presentation (*Vorstellung*), it isn't defined as a sentiment associated to these presentations, it is not a subject's mode of being affected, but rather it is *the unmodified consciousness itself* (Husserl 1898-1925, 557-558). The belief belongs to the laws of reason, namely those essential laws of the intuitive fulfillment of the unmodified consciousness. These essential laws postulate the objects as identites with a ceaseless confirmation, existing in themselves in opposition with volatile consciousness (Husserl 1898-1925, 557-558). Originally, the belif is not propositional or reflective, under the guise of *I think that this bottle is real,* but rather it is automatic and pre-

reflective (O'Shiel 2022, 11). *The basic mode of perception constitutes and contains a certain recognition of the actuality and reality*. The actuality belongs to the experiential character of perceptual consciousness. The most basic form of perceptual consciousness is the unmodified and the un-modalized one, according to Husserl. By its nature, this form of consciousness postulates the automatic belief in the independence and the durability of objects, despite a series of variations and conscious absences (O'Shiel 2022, 11). Moreover, this is a certain type of belief that posits itself as being *impresional,* giving the basic structure of perceptual consciousness in Husserl's theory of perception (1898-1925, 215-218). In other words, the perception is understood by Husserl as a primordial form of consciousness, being related to the real and present things. This perspective is also encompassed in the term attributed by Husserl to perception, namely that of *original or originary consciousness* (Husserl 1918–1926, 4). The perceptual experience is inexhaustible; it is related to the specificity of perception, as only certain aspects or characteristics of the phenomenon present themselves to consciousness at a particular moment. According to Husserl (1918–1926, 19), there is no all-encompassing or totalizing perception. He asserts that *we cannot think of the given object without empty horizons at any stage of perception*. This means that any perception is situated, embedded in a perspective that implies a subject perceiving[3] and, at the same time, *empty horizons* that can be filled with more perception: (eye movement, head movement, hand gestures, displacement, etc.). Understood as belonging to the lived body, perception can only be *synesthetic* and *kinesthetic*. Attempting to discuss each of the five senses separately constitutes a static act of abstraction or analysis, whereas at the level of everyday lived experience, the senses are driven by dynamic relationships and processes among themselves, as well as in relation to the environment, people, or objects. In other words, reductionism of perception to mere sight should be avoided. Husserl's synesthesia encompasses all five senses, considering that synesthetic processes, along with kinesthetic ones, have their roots in the tactile act. Touching is thus a fundamental sense, which not only enables primal activities

such as standing or walking but also brings together the other senses, centralizing and unifying them in a perceptual system (O'Shiel 2022, 13).

This perceptual system is provided in Husserl through the notion of "Leib*," the absolute Now of the entire spatial orientation* (Husserl 1952, 69), which simultaneously implies the *Ego-pole* of a conscious agent (Husserl 1893-1917, §18). Perceptual consciousness always involves an embodied agent situated in a spatial reality (O'Shiel 2022, 13). This spatiality must necessarily be marked by a horizontal aspect: every perceptual act opens up in relation to a horizon, whether it be an internal horizon (looking inward) or an external horizon (looking outward). Thus, horizontality appears as a fundamental structure of perception (Husserl 1918-1926, 6-7). Husserl aims to distance himself from a privilege granted to the spatial horizon concerning perception, considering that perceptual consciousness is already situated within a dynamic temporal horizon. That *Now* provides the other necessary dimension for the Leib to establish itself as point 0 of perception.

We observe three moments of perception in Husserl's analysis of time-consciousness or consciousness-time, which cannot be understood as separate outside the continuity of the lived current experience (Husserl 1893-1917, § 14): a) *the primordial Now*; b) *retention* (barely past); c) *protention* (not yet arrived/future). This tripartition suggests how an inherent notion of absence or potentiality is implicated in any movement or change that takes place at the perceptual level (O'Shiel 2022, 13). Husserlian researchers acknowledge, even in the 1980s, that there is a certain dynamic between presence and absence unfolding within the perceptual regime: Sokolowski (1980, 640) states that *presence can only appear or be understood in contract and in relation to absence*. This dynamic between presence and absence is established based on the horizontal structure of perception: *someone is never in the presence of a completely absolute presence.* In other words, any act of perception at a certain moment involves a protention, something more along the space-time axis that has not yet been perceived. O'Shiel (2022, 14) concludes by stating that although

perception provides an object or a set of present and real objects, it simultaneously opens up to things, aspects, or dimensions that decisively are not (yet) there. Husserl himself (1918-1926, 11) asserts that every perception implicitly invokes a whole perceptual system. Any appearance is actually inscribed in a system of this appearance, related to internal and external intentional horizons. There is no mode of appearance in which the appeared object can offer itself in its entirety: according to Sokolowski, Bernet (1982, 86) shows that this Husserlian concept of the *presence of presence* (*gegenwärtige Gegenwart*) can be interpreted either as the zenith of the metaphysics of presence (within the Heideggerian post-Husserlian tradition), or as an attempt to derive the presence of a now-existing present from the absence of a non-now.

Following all the considerations mentioned above, we can briefly outline in general terms the characteristics of perception in Husserl's view: present, real, actual, certain opinions/beliefs, and impressive/impressional, inexhaustible, situated, perspectival, necessarily synesthetic and kinesthetic, embodied in space-time, horizontal containing implicit absence. For a phenomenology of immersive experiences in augmented or virtual realities, what is most interesting is precisely the inherent horizontality of perception alongside the structure of presences that are in a dynamic interdependence with implicit absences. These implicit absences will be referred to by O'Shiel (2022, 15) as *virtual presences*.

How could we relate to this notion of the virtual? O'Shiel, following in the footsteps of Rob Shields (2003, 2), points out that in everyday English language, the term "virtual" can be substituted with *almost*: "I have virtually finished" can be understood as "I am almost finished." If we start from this substitution in everyday language and integrate it into a phenomenological analysis, we understand that the back facet of the observed phone is almost-present or virtually-present, as it will be actually present immediately when I turn the phone. However, once I turn the phone, the front facet that was previously present will become absent, suggesting that any new act of presence will be accompanied by new absences, constituting a lived dynamic that O'Shiel (2022, 15) believes

should be carefully nuanced and detailed under the notion of *perceptual or lived virtuality*.

2. The Problem of Image-Consciousness in Husserl

In English, the term *Bild* from *Bildbewusstsein* could be translated as both *picture-consciousness* and *image-consciousness*. O'Shiel prefers the latter to suggest that although Husserl refers to sculptures, paintings, and photographs from his era, this term can also apply to digital images and types of images that are not necessarily visual (such as soundscapes in ambient music). Image-consciousness carries an oxymoronic character in Husserl's philosophy. It seems to contain both present elements, related to perception (real and perceived objects), and absent elements (unreal, imaginable objects). In the case of photography, when I look at a picture, I deal with both actual, perceived elements that constitute the picture as a physical object I can look at or hold, but the content of the picture refers to an object that decisively is not present, not before my eyes.

Husserl (1898-1925, 19) proposes a tripartite structure of image-consciousness: a) The physical image, the material object constituted from marble, paper, or others; b) The object that represents or illustrates (image-object); c) The object that is represented or illustrated (image-subject).

This structure can be suitable for both analog and emerging digital media after Husserl's death, such as televisions, computers, smartphones, and the like. This type of consciousness goes beyond the realm of the visual, as seen in the case of auditory images formed by physical waves (physical image) that are heard (image-object) and refer to a subject image: for example, when we hear a song by a favourite band on the radio, and it reminds us of their concert that we attended.

There are also tactile and olfactory image-consciousness experiences. In the case of touch, when we interact with a gaming controller (physical image), it produces the effect (image-object) of making our avatar run in the game (image-subject). In the olfactory realm, when we smell an apricot-scented pastry (physical image), it evokes the scent (image-object) of an apricot (image-subject). We can extrapolate the

example of the apricot-scented pastry to the realm of taste, showing that when we taste a bite, we can mentally evoke the image of an apricot that is not physically present in our immediate vicinity (O'Shiel 2022, 24).

The difference between the visual and auditory planes compared to the tactile and gustatory planes regarding the relationship between perception and image consists of the following: in the perceptual act, the visual and auditory planes are distanced from the perceived object, giving them a greater capacity to become image-objects, whereas for touch and taste, physical contact with certain objects of the body is necessarily involved. However, we will observe that with the emergence of highly sophisticated immersive virtual technologies, the other senses can easily acquire the status of image-objects. In other words, in any image, its subject is made present by the specific physical version that someone sees, hears, feels, smells, or tastes (O'Shiel 2022, 25).

The tripartite structure of image-consciousness activates a dynamic of intentional implications: perception (*Perzeption*, with the sense of awareness of the sensory substrate, distinct from *Wahrnehmung*, which refers to perception involving a strong tetic character not found in image-consciousness) of the image-object (*Bildobjekt*) on the material support (physical image or *Bildding*) intentionally evokes the image-subject (*Bildsujet*). In the words of Maxime Doyon (2019, 197): *based on the perception of a sensory substrate, a subject is imaginatively presentified.*

Image-consciousness involves, according to Husserl (1898-1925, 79), a *perceptual-imaginative apprehension* (*perzeptiv-imaginative Auffassung*). We can assert that image-consciousness is part of that spectrum in which the perceptual act of presenting an image-object allows for the imaginative presentation of an image-subject based on the materiality of the support through which the image-object is perceived. In other words, based on perceiving an owl framed in the materiality of a photographic frame, I can imagine an owl that is not physically present near me. This phenomenon, which connects perception (*Wahrnemung*) with quasi-perception (*Quasi-Wahrnemung*), is due to the fact that the same sensory content

(the image of the owl) is apprehended as an image-object framed in a physical image but simultaneously facilitates the opening to an imaginative consciousness (Husserl 1898-1925, 86). In the case of image-consciousness, imagination does not have a synthetic or transcendental role because the image-subject is represented within the material context in which it is perceived. Thus, imagination takes on an empirical sense, allowing Husserl to affirm that image-consciousness constitutes a moment of perceptual experience, or in other words, that image-consciousness is given based on perception (Husserl 1898-1925, 82).

Maxime Doyon (2019, 198) identifies in Husserl a distinction between image-consciousness and perceptual fantasies, but O'Shiel does not see a fundamental distinction between the two. We could argue that there is rather a difference in degree than in content, a difference related to the capacity for transfer from presentation to imaginative presentation (presentification). In Doyon's view, what gives specificity to perceptual fantasies is the simultaneous co-existence of the actual (perceived) and the non-actual (imagined) in the moment of experience. When we are spectators of a theater play, we experience a state of conflict (*Widerstreit*) between the presence of the actor and the figure of the emperor he is portraying. This coexistence of perception and quasi-perception points to a dual nature of the experience that can be found at the level of representation: *while the actor is present perceptually, the fictional character is imaginatively present in the actor* (Doyon 2019, 198). What could constitute a difference from experiences containing image-consciousness is the reduction of the image-object to the image-subject during the experience. In other words, during a theater play, the spectator undergoes an experience in which what is currently perceived is concealed by the imagined object: the spectator no longer sees the actor but actually sees the king. We consider that this situation is also possible within image-consciousness, so we will not maintain a sharp difference between the two terms, given that both are constituted by the same structural elements (a perceived materiality serving as a support for an image-object representing or illustrating an image-subject; a perceptual-

present-physical background referring to an imaginative-absent-unreal background). An important observation made by Doyon (2019, 199), with which we agree, is that the way perception and imagination collaborate in intentional consciousness does not follow the Kantian path of a synthetic function of imagination. Bundles of sensations do not require a subsequent synthetic realization; rather, imaginative consciousness, at certain moments, requires a material support on which to project its content.

We can describe image-consciousness as *the external physical phenomenon that stimulates one or more senses to experience an object that is not truly present in that field from a perceptual standpoint* (O'Shiel 2022, 25).

The physical image belongs to the realm of the perceptible, while the image-subject is accessible only through presentification. The status of the image-object is ambiguous in Husserl's framework. One possible explanation for this status is the ambivalence that the image-object holds in relation to the physical image. Simultaneously, it can be understood as part of the physical material support given to the perceptual act, serving as a presentation. However, on the other hand, it does not present itself as self-sufficient, where the presented object would be self-referential and not refer to the alterity of a horizon that would be inactual at the moment of experience (the difference between the figure of the owl as a perceived object and the figure of the owl as an image-object referring to a real owl as an image-subject).

Consider the case of a football match broadcast on television: the television is considered as a physical assembly, thus a physical image; the images transmitted from the match are considered as image-objects, and the match experienced directly from the stadium is taken as an image-subject. O'Shiel (2022, 26) names this experience of the image-object as the phenomenal and sensory experience of *looking at something that clearly is not in the room where one is observing*. This "*not being there*" is guaranteed by the final link of the tripartition, namely the actual match taking place in the stadium, presented as an image-subject. If I were at the stadium, I would perceive the match. As I am in my room watching it through the screen,

I can say that I am *pseudo-present* at the match, through this tripartite structure provided by image-consciousness.

Certainly, we can affirm that image-consciousness does not constitute a type of perception, as within perceptual acts, we do not operate with this transgressive attitude of illustrating a certain form of absence or quasi-presence that is not physically within the proximate horizon of experience. Another example suggesting that image-consciousness surpasses the perceptual threshold relates to cases where various non-human animals, when looking into a mirror, try to search beyond the mirror for the figure they observe, implying that they do not have the capacity to access image-consciousness as a post-perceptual threshold.

At the same time, image-consciousness also distinguishes itself from pure imagination or fantasy, as the latter does not require the postulate of a physical image, of an actual materiality, to construct its object.

We could define image-consciousness as a hybridized mix between perception and imagination. However, a contemporary, post-Husserlian term that could be suitable for this type of experience is that of *artificial or virtual presence* (Wiesing, 2010). Husserl reflects on a photograph representing a child: the image-object cannot be confused with the image-subject; rather, it functions as an analog of the image-subject. The child being represented differs in terms of size, color, and other aspects from the child represented. The child in the photograph appears as a photographic image of the represented child. At the same time, Husserl distinguishes between the physical image and the image-object because the physical image constitutes a real object that is perceived. We consider that the ambiguity and complications arising in the understanding of the image-object stem precisely from Husserl's position of not granting the image-object a constitutive status within the physical image. We believe that the image-object can be perceived as a real object itself, belonging to the material framework of the photograph, without bypassing its evocative capacity, detaching itself from its material instantiation in the physical image, and pointing towards an image-subject that is perceptually absent.

The status of image-consciousness remains uncertain in Husserl, potentially being categorized as that liminal space between perception and pure imagination. In the context of the emergence of new virtual-artificial-immersive technologies (AR, VR in gaming, and artistic experiences), a clarification of this status is required to understand the phenomenological nuances of these types of experiences more comprehensively.

How does post-Husserlian phenomenology respond to the ambiguity of the status assigned to image-consciousness in Husserl's research?

3. Perception and Imagination in Merleau-Ponty

For Merleau-Ponty, there is no clear-cut distinction between perception and imagination, as in the realm of lived experience, there is a fundamental intertwining of these two dual capacities of human experience (O'Shiel 2022, 81). If we consider imagination in a general sense as the human capacity to evoke absent objects, this interweaving operates as a primordial framework for the entire existence and human experience. However, there are passages that distinguish, following the Husserlian tradition, between perception and fantasy (understood as imagination in a narrower sense).

Merleau-Ponty remains Husserlian both in *Phenomenology of Perception* and *The Primacy of Perception* when he accords perception the status of primary experience. In terms of understanding and describing perception, he borrows terms from the Husserlian language, such as the lived-body or *Leib*, characteristics of inexhaustibility, horizontality, spatiality as a constant now, synesthesia, alongside the structure of spatiotemporal presence as fundamental components of the perceptual system. However, Merleau-Ponty's innovative contribution lies in focusing on somatic experience, analyzing in detail the centrality of the lived body in the frames of experience. This total centrality that Merleau-Ponty attributes to the concept of "Leib" even allows him to claim that a theory of the body already contains within itself a theory of perception (Merleau-Ponty 1945, 239). This total centrality of the lived body allows Merleau-Ponty to argue that the nature of human experience is always dynamic, intertwined, ambiguous, or even

contradictory. The difficulty in phenomenologically separating types of intentional consciousness that coexist interdependently outside the exercise of phenomenologizing experience arises from this dynamism.

While Merleau-Ponty does not systematically focus his research on imagination, there are passages in *Phenomenology of Perception* that can offer exegetical insights into the relationship between perception, imagination, and virtuality (O'Shiel 2022, 83). Unlike Husserl and Fink, who maintain a strong distinction between perception and imagination concerning the ways of presenting an object, Merleau-Ponty, following a Heideggerian line, argues that there is no case where a perceptual act takes place purified of imagination. In other words, no type of consciousness *is closed in on itself* (Merleau-Ponty 1945, 338). However, Merleau-Ponty still maintains the distinction between perception and fantasy as a specific case of imagination, as fantasy can refer to the horizon of pure unreality. Any temporal perceptual structure consists of a mixture of presence and absence, so intentional experience admits relative degrees of presence and reality. In other words, there are no phenomena that are purely present and real or purely absent and unreal in Merleau-Ponty; each phenomenon is constituted through this mixture of immanent presence-reality and transcendent absence-unreality (Merleau-Ponty 1947, 16). In *Eye and Mind* (1961, 24, 41, 54), the French phenomenologist illustrates the interplay between perception and imagination through their relations to the couplet of presence-absence. He shows that sight is divided into the sight of thought (reflection) and the sight of the body (which includes perception, imagination, image-consciousness or fantasy). Mental images (fantasies) bring absent objects into presence, necessarily using elements of the body. The field of the imaginary is simultaneously near and far from what pertains to the actual realm of perception, as it still utilizes the body as the actual structure of experience but in a manner that allows the subject to transcend this field of actuality. What should be understood here is not an affirmation that post-perceptive types of intentional consciousness have the capacity to actualize objects, but rather that any external physical image involves

reality in some form. In other words, the Husserlian couplet of image-object and image-subject or Fink's concept of the image-world should be treated as real structures, even if they do not belong to the order of perceptual actuality. Following Bergson, Merleau-Ponty does not oppose the imaginary to the real but strictly to the actual. Paintings, photographs as physical images possess this capacity to use the body imaginatively to make present objects that exceed the sphere of perceptible actuality.

The presence of an absence in a perceptual experience cannot be explained without invoking the imaginative capacity of the subject, a capacity intertwined with perception in *the pre-objective reality of the being-in-the-world act* (Merleau-Ponty 1945, 95). Although aware of the horizontality in Husserlian perception, Merleau-Ponty does not seem to legitimize terms such as *empty intentions*, which would describe perceptual acts without the need for an appeal to imagination (O'Shiel 2022, 85). However, while maintaining a particular distinction between perception and fantasy, Merleau-Ponty suggests the ambivalence between the general interdependence and the local opposition between perception and imagination. This point seems to support his assumption that human experience possesses a contradictory nature.

Both from Merleau-Ponty's research on painting and his work on film, it emerges that any experience should be analyzed within a particular medium, avoiding attempts to operate with strict and general distinctions between what is real and what is not, what is perceived and what is imagined. Any attempt to give a univocal status to a type of intentional act within a phenomenal experience would be doomed to failure because it would not align with the postulate of interdependence and intertwining between different types of consciousness.

4. The concept of Virtual in Merleau-Ponty

The French phenomenologist uses the term "*virtual*" in several instances (Merleau-Ponty 1945, 129, 289). It proves useful in establishing the relationship between the *body schema* and the *virtual body*. The body schema is understood as the general capacity to be aware of our body engaged in dynamic

interaction with the world, and this interaction necessarily involves a *virtual body*. The virtual body refers to the imaginative ability to mentally project alternative positions of the body through which a situation could be observed (Steeves 2004, 18-26).

The virtual body not only serves the function of facilitating the experience of perceptual change, possibility, or potentiality, but it also has a performative or actional status. This involves facilitating learning and adaptive abilities, inherent in the imaginative ability of the virtual body. In other words, the perceptual horizon of one's own body harbors dynamic potentialities of its various variants that inherently emerge from its interactions with the surrounding environment. Steeves identifies 8 types of imaginative engagements in Merleau-Ponty: bodily imaginings, perceptual imaginings, aesthetic imaginings, fanciful imaginings, pathological imaginings, self-imaginings, elemental imaginings, and existential imaginings. There is ongoing debate about whether these 8 types differ in any way from the Husserlian terms, including imagination, image-consciousness, or perceptual fantasy. However, it is certain that, in Merleau-Ponty, the emphasis on the somatic focus of phenomenal experience involves a broader type of imagination within perception. The body is understood as the pivot that stands between perceiving and imagining, allowing the fusion of the two within the experience. While differences in nature between perceptual reality and imaginary unreality can be observed in Husserl and Fink, Merleau-Ponty exhibits more specific theoretical differences between them. These differences subscribe to a general framework of experience, where the two merge within the continuum of experience.

The status of image-consciousness in Merleau-Ponty is explored in an article by Trevor Perri from 2013, analyzing the ontological implications arising from Merleau-Ponty's research on painting and art as images. Paintings take on the same status as objects mediating between pure perception and pure fantasy, and due to this ambivalence, paintings have the capacity to blend presence and absence, reality and unreality, visibility and invisibility in Merleau-Ponty's view (Perri 2013,

77). Similar to Fink, the quality of being a physical image in photography or painting cannot be denied, establishing itself as a real-present object related to perception. However, this dynamic between quasi-presence (material support + referential content) and absence (the real or fictional referent to which the referential content points) clearly demonstrates that image-consciousness does not constitute a self-sufficient perception. Another aspect highlighted by Perri is that within Merleau-Ponty's theory of art or painting, the function of objects is not one of representation or illustration but rather of expression. In this sense, mediums like painting or photography augment perception rather than presenting a past perceptual act because these mediums make visible details that were previously invisible (Perri 2013, 88). Art adds something to the perceptual field rather than representing pre-existing elements within it. This augmenting function occurs not only on the perceptual field but also on the somatic processes of the body. The idea is that painting, photography, or other artistic mediums open or even unlock a certain awareness or appreciation of internal somatic movements (Perri 2013, 93-94), emphasizing once again the primordial centrality of the lived body in Merleau-Ponty's philosophy. However, the French phenomenologist seems to accept the idea of pure imagination, fantasy, which in a local sense differs from perception and other imaginative acts because it does not need that concrete support to make present a phenomenon or object absent from the perceptual field. In other words, human capacity to construct fictions, to imagine worlds, to visualize forms, numbers, letters do not require an immediate perceptual background to activate. The idea of an expansion of perception contradicts arguments suggesting that perception and reality are rather impoverished resources in the face of the imaginary. Anabelle Dufourcq (2015, 39) even speaks of the ability of artworks to activate *a super or over-presence* in spectators.

Art and the imaginary cannot be confined to absences and fictions alone; they must also include elements from the realm of the real. Following the author's footsteps, we can assert that the real possesses a certain imaginative foundation, especially as our daily experiences involve the naturalization of

mediated experiences, where the sphere of the actual-present-perceptible no longer clearly distinguishes itself from the virtual-unreal-absent. This is because the types of objects that could constitute image-consciousness today have been acclimatized to human phenomenal experience.

A simple observation exercise makes us aware that we have in our possession, in close proximity to our bodies, at least one device that generates dynamics between presence and absence, namely the smartphone. Even when we sleep, it is near us, functioning as a sort of non-human assistant to humans, defined by its programmable capacity (the phone's clock/alarm function). The field of the real has been virtualized by filling it with supports that can generate content that cannot be perceived as a physical object. This prompts us to rethink, from a phenomenological perspective, the ways in which we could describe the relationship between perception and non-perceptive acts or how we typologize the status of these intentional acts that phenomenological tradition has theorized and problematized. Here, Husserl, Fink, and Merleau-Ponty agree. Fundamentally, they concur, even with slightly different motivations, on the conclusion that image-consciousness, compared to other types of presentifications, lies somewhere between pure perception and pure imagination. This is because it operates with a quasi-perception and a quasi-absence from the physical plane of an evoked object. In contrast to Husserl and Fink, Merleau-Ponty seems to radicalize this conclusion to the extent of the inability to make a general distinction between perception and imagination. Both operate simultaneously for the continuity of everyday experience, intertwining in the lived body.

At this moment, we are still in ambiguity regarding the methodological debate in the history of phenomenology on the distinction or interdependence between perception and imagination. It is certain that the differences in the positions of Husserl, Fink, and Merleau-Ponty are largely differences in nuance and emphasis, as discussed above. However, in the case of the latter, the phenomenological description of an experience seeks to melt into a somatic continuum what Husserl attempted to describe through a reductive distinction. This was achieved

by separating, in phenomenological discourse, categories of cognitive and psycho-somatic processes that could not be separated in lived experience. One could speculate that Merleau-Ponty does not find a formal distinction between phenomenological discourse and the pre-phenomenological experience being described.

The analysis of a phenomenon must be carried out taking into account the subject's situatedness in a somatic center absorbed by the spatiotemporal continuity of the ambient environment. We could call this type of approach an eco-phenomenology of somatic situatedness. Another way to resolve this uncertainty regarding the separation or fusion of perception and imagination would be to turn to ontology. If we start from the assumption that phenomenology seeks to describe an eminently subjective experience, it is easy to understand that the subject is situated in an ontological environment—put differently, in a field of life or existence. Ontology could help us fit phenomenal experience into an ontological framework that might regulate the relationship between perception and imagination through analogies with the interrelationships between modes of existence.

Henri Bergson and Gilles Deleuze offer insights that could help regulate a suitable framework for the relationships between the real and the unreal, the actual and the potential, the absent and the present.

Their processual-materialist approach to a theory of life, which is outside the phenomenological method, leads them to question the possibility of pure perception. In *Matter and Memory*, Bergson suggests that pure perception and pure memory cannot be experienced in everyday lived experience, and the concept of virtuality has a profound metaphysical significance, as it is found in vast portions of the experience of the real world. The virtual suddenly becomes a threshold, an intercessor, or a liminal space between other thresholds, such as the real and the unreal, the present and the absent, the actual and the potential.

Pure perception and pure memory function more like the two extremities of conceptual poles that cannot be differentiated in the praxis of life. Rather, in a processual and

holistic ontology, they are understood to mutually interpenetrate in the constitution of a lived body's experience. Bergson and Merleau-Ponty converge in granting privilege to a synesthetic approach to the description of lived experience.

Avoiding a fall into either idealism or realism, Bergson constructs what O'Shiel (2022, 92) termed a "monism of the image," where every element of reality is in some way an image, and even matter is understood as *a collection of images* (Bergson 1896, 1). Bergson's technical sense of the image refers to a kind of existence that is beyond what idealists call *representation* and this side of what realists call a *thing*.

There is a certain equivalence between what phenomenologists call the object of which consciousness is informed, from real-present objects to unreal-absent objects (from chairs to unicorns), and what Bergson terms the image. As a conceptual hypothesis, pure perception would involve a total immersion in the experience of matter, eliminating any form of memory so that the perceiver of matter becomes immanent to matter. In other words, pure perception could be understood as matter itself, as what is perceived without being correlated to an agent perceiving. At the other conceptual pole is pure memory, the realm of a mind that is entirely purified of any perceptual or somatic influence—a mind without a body.

For Bergson, virtuality serves as both an aid to perception and memory. Regarding perception, every perceptual act opens up a horizon of possible actions on objects. Bergson considers that any proximate action separated from the body by an interval function as a *virtual action* (Bergson 1896, 57). When looking at a bottle of juice, I virtualize a number of actions I could immediately take—pick up the bottle, drink from it, place it back on the table. Objects in proximity reflect possible actions arising from the perceptual act. These virtual actions are always in a lively dynamic with the body generating perceptions and enactive memories, which can be understood in Husserlian language as active retentions (O'Shiel 2022, 94). Concerning the realm of memory, any recollection of a phenomenon that was initially perceived remains in a virtual state (Bergson 1896, 270) until the moment it is activated.

The methodological principle that allows Bergson to propose virtuality as a facet of the real is to describe life in terms of lived time, that is, in terms of duration, and not in the form of secondary spatializations that seek to fragmentize the processual continuum of lived life into static moments. If the description of an experience unfolds more as a process than as a logical sequence of frozen moments, we can understand that in the very fabric of reality, there are virtual interstices that ensure the infinite-speed transition from possibility to actuality and back to potentiality.

Due to the comprehensive understanding of the term "*memory*" in Bergson, we can correlate, in phenomenological language, actuality with presentation and perception, while memory corresponds to presentification or imagination in a broad sense, namely the evocation and reflection upon a spectrum of objects stemming from experiences of real past events to purely imagined objects. Virtuality is that liminal threshold between actuality, potentiality, and possibility, with the characteristic of *spontaneous potentiality* being fitting to describe it, especially when taken as an adjunct to perception, particularly when it comes to actions not yet performed but to be carried out based on the perceptual act of an object. Simultaneously, virtuality ensures the spontaneous transition from presentation to presentification, in moments when a perception instantaneously triggers a certain form of presentification or imagination in the broader sense.

Deleuze (1966) emphasizes in his investigations into Bergsonian ontology that the virtual should not be opposed to reality in any way but only to the actual. The virtual has an ontological significance because it actually governs the structures of the processes of realization of bundles of processes, objects, and phenomena interacting in reality, beyond the phenomenological horizon of a subjective experience. Life itself constitutes a process of actualization, and for Deleuze, this aspect arises from the differential nature of existence, where any form of present and actual existence contains a multiplicity of virtual states waiting to be actualized, some of which may never reach actualization. Currently, the television is turned off, but it contains the virtual capacity to be

turned on. There is permeability between the realm of the actual and that of the virtual, with any updating involving a series of underlying virtualizations, and any virtualization involving a series of underlying updates. The television cannot be both turned off and turned on at the same time, indicating that any state of an object is relative to all the other states that constitute it. When the television is turned on, it is not in an actual or virtual state in itself; rather, it is in an actual state in relation to its quality of being turned off, a virtual quality at that moment, which can be updated in turn, transitioning its quality from virtual to actual when it is turned on.

If we accept the understanding that life operates as a constant process or flow between the actual and the virtual, we can observe how the dilemmas arising from Husserlian research are more terminological in nature. The horizontality of perception opens it not to a pure experience but rather to intertwinements in the realm of real elements that intersect: from virtual to actual and back to virtual, or towards the transition from the real to the unreal – from past perception of a horse to the imaginative construction of a unicorn.

5. From a Reality of the Virtual to an Unreal Virtuality: VR, AR, MR Technologies

Since the early 2000s, research on Virtual Reality has gained momentum, with the majority of studies having practical and economic purposes in mind. There are, however, philosophical studies related to the theory of art and how technology can be used to construct ecosystems that generate artistic experiences. Additionally, there are sociological studies investigating the functions of presence in a virtual space in online experiences such as gaming or communication on platforms like Discord, Skype, and others.

Given that VR technologies generate simulations of psycho-somatic experiences outside mediated space, using a combination of elements related to perceptual actuality and elements that are unreal from a concrete, physical existence perspective, the ontological status of objects generated in a VR simulation remains a matter of debate. David Chalmers sparked a controversy in 2017 when he claimed that virtual

objects have a real status, engaging in the broader debate between realism and fictionalism regarding the status attributed to mental and virtual objects.

O'Shiel argues that, from a phenomenological perspective, an attempt to describe a virtual object according to realistic assumptions instantly falls into a form of reductionist representationalism. He accuses Chalmers (2017) of using the term "real" only to indicate the presence of a virtual object within the experience. However, the way that virtual object becomes visible depends on the imaginative capacity of the subject, or rather on the ability to transfer from the raw perception of the analogical material in which the virtual object is fixed to the visualization of the virtual object. This virtual object is unreal in the sense that it lacks the characteristics of a physical, concrete, material object present within the perceptual horizon.

It is inclined to affirm that virtual objects generated by VR technologies are not unreal but rather quasi-real. They are conscious images that cannot be phenomenologically reduced to a specific type of intentionality; instead, they constitute an inter-intentional ensemble in which elements like perception and imaginative evocation continuously intertwine. Similar to Merleau-Ponty, immersive experiences through VR technologies serve to augment the field of lived experience, in a sense, to supplement everyday perceptual experience. If we accept the Bergsonian-Deleuzian ontological model, both virtual objects and the experiences they generate are classified as real because reality is not opposed to virtuality but is constituted, among other things, by virtuality. The philosophical implications of research on VR technologies extend beyond determining the ontological status of virtual objects and seek to understand whether VR-mediated experience functions as a simulation of experiences in physical reality and, if so, how this simulation operates.

Currently, immersion in a VR space could be understood as a quasi-perceptive experience of reality because it involves somatic stimuli of a haptic or even olfactory nature. However, the flow of visually generated objects cannot be termed as phenomenologically perceived per se because they do not

constitute material-physical entities. One of the philosophical challenges related to the development of VR lies in the possibility of covering, up to the level of total indistinctiveness, every element of perceptual experience. This could culminate in the erasure of the moment of awareness of immersion into a non-place. In practice, virtual reality might blend seamlessly with the entire reality outside it when the subject loses the ability to discern that the objects observed are not avatars representing other objects in the external space, thereby eliminating the problem of transitioning from one ontological threshold to another.

If we understand reality as a graded spectrum, utilizing the concept of the *reality-virtuality continuum* proposed by Milgram and Kishino in 1994, we can overcome the methodological tendency to absolutize the response to the question: what kind of existence do virtual objects imply, and what kind of experience do these objects generate?

Similar to the spectrum of degrees between pure perception and pure imagination or fantasy in phenomenology, we can extrapolate these two poles to a pole of pure reality, of perceptual order. This would involve an understanding of reality unmediated by digital screens or any platform or device supporting software, thus only mediated by cognitive-somatic processes, and a pole of pure virtuality. In this scenario, the experience is entirely digital, where the perceptual system is entirely blocked due to the subject's immersion in a fully virtualized or digitized space.

The question that arises from this spectralization of reality concerns whether the notion of perception should be redefined so that it is not limited to the human capacity to perceive physical-concrete objects. It would be incorrect to assume that once we put on VR headsets, the objects that appear to us are perceived, thus, in phenomenological terms, being presented, and not as being represented. This is especially true if we understand that even outside VR experiences, we can never speak of the occurrence of pure perceptions that do not involve the understanding of a nearby object and other post-perceptive processes such as imagination.

We consider that all the difficulties, dilemmas, and technicalities we have glimpsed throughout the analysis arise only when we attempt to operate with rigid methodological separations, which in lived experience cannot be entirely separated. Therefore, the VR experience cannot be entirely real or unreal; instead, it functions more like a liminal ecosystem that allows the transition from actual stages (acquiring physical objects like VR headsets) to virtual stages (the generative capacity of those headsets to construct networks and kinetic flows of objects not physically present in the subject's immediate vicinity within the VR ecosystem) back to actual stages (the fact that certain interactions with those objects serve as psycho-somatic stimuli for the subject).

VR technologies have revolutionized gaming by focusing on the lived body through a process of unrealization of elements belonging to the lived body. Real movements that are perceptually felt have direct effects within the game, creating an immersive relationship between the lived body and the game environment, which can be described as an augmentation of self-perception within a virtualized space. For example, in a traditional first-person shooter (FPS), the sensation of death is not felt with the same affective intensity as in the immersive experience of a VR shooter, where a process of virtual embodiment is established.

The term AR refers to augmented reality, as seen in filters on platforms like Instagram or other techniques that distort content representing a real phenomenon/object or a real entity. In VR environments, we can discuss a curation of the self, constructing the relationship between the self-constructed outside the online sphere and the one constructed in the online sphere. This mediation between identity constructs in the physical universe and digital-virtual avatars already points to a form of mixed reality (MR). MR encompasses the spectrum of blends between the real and virtual, covering all types of AR and VR, along with any other medium outside unmediated perception or pure VR experience (O'Shiel 2022, 194-195).

6. On the Possibility of Pure Mixed Reality

The study by Rommanus et al. (2020) illustrates that, with current technology, individuals can visually, auditorily, and tactically experience a virtual heart without the need for haptic gloves or physical screens. This technology integrates the Magic Leap AR Headset, an Ultrahaptics pad, and an Apple Watch, synchronizing them to enable users to interact with an airborne haptic bio-hologram. The hologram is synchronized with the user's heartbeat, allowing them to touch and manipulate the hologram through touchless haptic technology based on ultrasound. This method employs electronically controlled phased arrays of ultrasonic speakers (transducers) to generate high-pressure acoustic points in the air, which can be felt with bare hands (Rommanus et al. 2020, 2). It's important to note a current limitation of holograms: their projection onto flat two-dimensional surfaces; transitioning to three-dimensional projections could enhance the visual, auditory, and tactile experiences.

At Husserl, the haptic/tactile sense is highly esteemed, and outside of it, it is considered that physicality, self-consciousness, or even movement would not be possible. The haptic sense, together with distal attribution (the automatic opening of the body to the external space), offers the possibility to navigate any kind of external environment, whether real or imaginary. Currently, touching immaterial, digital objects, such as holograms, is under strong control, allowing the subject to discern that they are dealing with a digitally fabricated object. However, there is the possibility that through technological evolution, holograms or other phenomena of virtual incorporation can be described both functionally and phenomenologically as real, non-digital objects (O'Shiel 2022, 197). If holograms come to be experienced through all five senses activated simultaneously, we can already explore the emergence of a pure mixed reality (pure MR). Pure MR appears as both a theoretical possibility and a real-time technological development. This field would have a revolutionary character, not necessarily in a colonizing sense to universally replace natural perception in everyday life, but with the capacity to

blur certain well-established ontological and phenomenological distinctions in human consciousness.

7. The Degree of Presence of Subjects and Objects in Mediated Spaces

Since Husserl, we observe this peculiar status of image-consciousness objects, making it difficult to establish the epistemic or ontological regime of sculptures or photographs, later of films, video games, immersive installations, or VR environments. If we follow the traditional phenomenological strategy, where real objects/phenomena are those directly given to our perception, we would conclude that all these types of media mentioned above are not entirely real because they operate based on real concrete supports that sustain the generation of entities absent from the immediate proximity of the perceptual field. In other words, if we see a character in a photograph, that character is not physically present next to us. However, technology had already started a revolution in the early 2000s in how it virtualizes the entire perceptual field of humans by creating three-dimensional virtual spaces accessed through immersive technical supports such as VR glasses, designed to simulate a full perceptual field experience (where at least three senses are active simultaneously). Military technology had been at the forefront of scientific research during the Cold War period regarding the augmentation of human perception through technological means, from night vision to visual systems for underwater navigation, and special audio-video communication systems. We can observe since the 20th century how more and more types of objects with hybrid ontological regimes emerge in the sphere of technology, being used for functional purposes in various industries as well as for cultural-artistic purposes. In other words, the privileging of material, concrete phenomena as the only real ones appears increasingly suspect because human perception becomes more impure, adapting to everyday life objects of image-consciousness type, such as smartphones, smartwatches, GPS devices, etc. We can no longer discuss a genuine and justified dichotomy between the real as actual-present and the unreal/fictional as absent-possible or as present-virtual, as the

human perceptual apparatus has adapted to the considerable use of devices that generate different types of presence than the physical presence of objects.

A study from 2003 (Ijsselsteijn, Riva 2003) investigates the types of presence that occur in collaborative virtual environments (CVEs). In order to understand the type of experience activated by the interaction between humans and a controlled virtual environment, we should first describe the concept of presence and then establish the main types of presence. We can understand the experience of presence as *a multidimensional perception, formed through the interaction between raw multi-sensory data and various cognitive processes, where attentional factors play a decisive role* (Ijsselsteijn, Riva 2003, 3). If we consider presence as a perceptual factor that can determine the type of experience generated by immersion in virtual environments, we can distinguish between two variables that determine the degree of presence of a user in that environment: on the one hand, the characteristics of the environment, and on the other hand, *the characteristics of the user*. In other words, there are external-objective determinants (environmental factors) and internal-subjective determinants (bio-psycho-physiological factors of the individual) of presence.

Sheridan (1992) proposes three determining categories of presence: a. *the amount of sensory information presented to the participant*; b. *the level of control the participant has over various sensory mechanisms*; c. *the ability of the participant to modify the environment*. These three categories refer to the form of the environment, i.e., the physical, objective properties of the arranged environment. At the same time, there is a content of the environment, consisting either of virtualized real entities or fictional entities, such as objects, agents, or communities represented by the environment.

Viewing the generation of the presence experience in human cognition from a cybernetic perspective, we can assert that presence emerges as a circular process, where the multi-sensory stimuli from the environment (output) are cognitively felt through the user's actions relying on the perceptual motor loop (input). This continuous loop of the perceptual *motor reflects the ongoing process of real-time action-based perception,*

meaning perception dynamically changes as we navigate and interact with the real world (Ijsselsteijn, Riva 2003, p. 4). It is also essential not to discriminate between multi-sensory stimuli generated by the physical environment and the virtual one. There is no intrinsic difference between stimuli generated by the real environment (the room we are in) and the mediated space we immerse ourselves in (the television in that room to which we direct our attention). Whether we feel more present in that room or more present in the act of watching TV depends on which perception becomes dominant at a given moment. When it comes to digitally mediated virtual spaces, the more immersive and perceptually plausible the environments become, the more pronounced the sense of presence will be. There is tension or agonistic competition between the computer-mediated world and the local physical environment regarding the subject's attention capture. The concept of telepresence arises when more attentional resources are allocated to the mediated space: *the more attentional resources a user dedicates to the stimuli presented by screens, the more pronounced the identification with the computer-mediated space, and the more acute the sense of telepresence* (Draper et al. 1999, 366). The general consensus on the structure of presence establishes the existence of three structural factors of presence in mediated virtual spaces: spatial presence, involvement or engagement, and the level of reality engaged by the environment (Lessiter, Freeman, Keogh, Davidoff 2001).

At the time of the Ijsselsteijn and Riva study, presence research was understood as an emerging tool for the design and evaluation of virtual environments, from a user-centered perspective. It aimed to assist engineers and software developers in identifying the necessary factors and variables to enhance the quality of users' media experience. Back then, this type of tool sought to facilitate an answer to a question such as: how can we construct environments that can be described as realistic? The 21 years that have passed since then show that this issue serves as a macro-indicator of the quality of the experience in virtual spaces. It is continuously revisited with new technological developments that expand the logistical capabilities of developers to accentuate the reality of the experience.

If we conceptualize presence in terms of realism, immersion, transportation, social richness, socially integrated actors in an environment, or the environment as a social actor (Lombard, Ditton, 1997), we could offer a comprehensive definition of virtual presence as *the perceptual illusion of non-mediation*, meaning the threshold at which *a person fails to perceive or become aware of the existence of a mediated technological environment during an experience* (Ijsselsteijn, Riva 2003, 5). Based on the similarities of the various conceptualizations mentioned above, Lombard and Ditton distinguish between physical virtual presence (the feeling of being physically positioned in a mediated space) and social virtual presence (the sense of communion provided by social group interaction in a virtual environment). The intersection between physical and social perception gives rise to co-presence, the feeling of being together in a shared space, synchronizing elements related to both social and physical perception.

The major difference between physical and virtual presence lies in communicability, in the sense that an environment lacking the ability to convey reciprocal communicative signals can activate a strong sense of physical presence. On the other hand, an environment like the internet or social networks, incapable of reproducing a strong sense of physical presence, can activate a powerful sense of social presence by constructing virtual communities. However, the media of interest for our endeavor are precisely at the intersection of physical and social elements, on the threshold of co-presence. In the diagram proposed by Ijsselsteijn and Riva in 2003, examples of co-presence include video conferencing, video telephony, or shared virtual environments (SVEs), while VR is within the realm of physical presence. It's worth noting that at the time of their article, VR technology was just an emerging possibility for exploring immersive interactions between a subject and a virtual environment, and there wasn't yet a tradition around Virtual Reality as a collective virtual-social space. Thus, with the advent of multiplayer VR games, we can confidently state that VR also falls under the category of co-presence.

If presence can be described as a perceptual illusion of non-mediation, we can understand presence as a quantitative factor that determines the degree of VR simulation enhancement. This sense of (co)presence is activated when the VR support and the external physical environment *disappear from the user's phenomenal consciousness*. Feeling present in a VR environment means activating a series of sensory responses to interaction with it without realizing its mediated nature. We can thus differentiate between immersion *as a description of the overall fidelity offered by screens and interaction systems in relation to physical reality* (Slater 2002, 14) and presence, understood as an augmented form of immersion. For Slater (1999, 560-561), the notion of presence in a virtual environment involves three aspects: the feeling of being present in the generated environment, to the point where the virtual environment becomes dominant, with participants more inclined to respond to events in the virtual environment than in the real world; the threshold at which participants, after the experience in the virtual environment, choose to portray it as visiting a place rather than viewing frames generated on a computer.

Since the year 2000, VR system developers considered the need for a series of socio-cultural parameters to monitor in their attempts to improve user experience regarding socialization and communication mechanisms within mediated spaces. To transition from VR environments as generators of physical presence to environments that generate co-presence, developers sought negotiation strategies for the socio-cultural needs, interests, and goals of users. Churchill and Snowdown (1998, 5-7) identified a series of parameters developers had to consider in the negotiation process: the transition from shared activities to individual activities; multiple and flexible representations and perspectives; a shared context; awareness of others' presence; support for communication activities. In other words, even during that period, there was a search for an understanding of VR environments as what would later be called virtual communities.

At the time of writing Ijsselsteijn and Riva's article, a major challenge in advancing negotiation processes was the inability to reproduce facial expressions and body postures in

virtual environments, essential elements in face-to-face communication. Over 20 years later, VR technology has evolved significantly and is now recognized as a established tool to support motor learning in various activities, with direct effects on motor learning (Shin, Lim et al. 2022). Here are a few ways in which VR environments support motor learning:

a. *Simulated Environments Facilitation*: VR can replicate scenarios from the real world, allowing learners to practice and develop motor skills in a controlled and safe environment. This is especially beneficial for tasks involving complex movements, such as surgical procedures, driving, or sports;

b. *Repetitive Practice*: VR enables repetitive practice, a key element in motor learning. Learners can repeat tasks and movements multiple times without the constraints of the physical world, improving muscle memory and skill acquisition;

c. *Motor Rehabilitation*: VR is increasingly used in physical therapy and motor rehabilitation. Patients recovering from injuries or neurological conditions can engage in VR-based exercises targeting specific motor skills, promoting recovery and functional improvement.

8. Conclusions

The conclusions we draw based on these final considerations invite us to assert that, from a philosophical standpoint, the ontological status of both experiences in VR and the entities (objects and processes) generated by VR environments can no longer be framed in qualitative terms. If, in Husserl's time, the status of objects like conscious images was uncertain because the experience generated by these objects was categorized as quasi-perceptive, and thus we could not classify these objects as entirely real, today we observe that there are no well-founded reasons to discriminate between sensory stimuli originating from physical space and those from the controlled virtual environment. In other words, the ability of VR environments to generate sensory experiences analogous to those outside these environments, along with their capacity to generate a sense of co-presence measurable by quantitative indices, compels us to posit the reality of virtual objects in

interactive VR environments. The lack of materiality in these objects, and their non-existence as physical, concrete entities, can no longer serve as sufficient criteria to deny these objects access to the aforementioned status, as would be suggested by O'Shiel's perspective. As long as immersion in a VR environment directly stimulates the psycho-somatic responses of the participating subject, we can no longer maintain the distinction between virtuality as unreality and actuality as reality, with virtuality, despite its lack of concreteness, developing means equally capable of generating multi-sensory, perceptual experiences.

NOTES

[1] See the case of the *amodal perception* of Kanisza's broken triangle, where the subject can perceive the absent lines of the triangle; these broken parts are present as absent, according to Noë; *amodal perception* = qualities that are perceptually present without being perceived in an actual way; the experience of presence is what we are perceiving as being outside of visual field (few examples: the perception of volume, the perception of color constancy.

[2] A central thesis of the enactivist or sensory-motor approach upon perception.

[3] In Husserl's terminology, we are talking about the "Leib," which refers to the lived body. This Leib is the absolute point 0 of the entire perceptual experience.

REFERENCES

Bernet, Rudolf. 1982. "Is the Present Ever Present? Phenomenology and the Metaphysics of Presence." *Research in Phenomenology* 12: 85–112.

Bergson, Henri. 1896. *Matière et mémoire*. Paris: PUF [Quadridge].

Churchill, Elizabeth F. and David F. Snowdon. 1998. "Collaborative virtual environments: an introductory review of issues and systems." *Virtual Reality* 3": 3-15.

Doyon, Maxime. 2019. "Kant and Husserl on the (Alleged) Function of Imagination in Perception." In *The New Yearbook for Phenomenology and Phenomenological Philosophy*, edited by T. Burns et al., Volume XVII, 180–203. Abingdon: Routledge.

Deleuze, Gilles. 1966. *Le bergsonisme*. Paris : PUF.

Draper, John V., David B. Kaber, and John M. Usher. 1999. *Speculations on the value of telepresence*. *CyberPsychology & Behavior* 2: 349-362.

Dufourcq, Annabelle. 2015. "The Fundamental Imaginary Dimension of the Real in Merleau Ponty's Philosophy." *Research in Phenomenology* 45(1): 33–52.

Husserl, Edmund. 1898-1925. *Husserliana XXIII: Phantasie, Bildbewusstsein, Erinnerung: Zur Phänomenologie der Anschaulichen Vergegenwärtigungen*. The Hague: Martinus Nijhoff.

Husserl, Edmund. 1918-1926. *Analysen zur Passiven Synthesis: Aus Vorlesungs nd Forschungsmanuskripten*. The Hague: Martinus Nijhoff.

IJsselsteijn, Wijnand and Riva, Giuseppe. 2003. "Being There: The Experience of Presence in Mediated Environments." In *Being There: Concepts, Effects and Measurements of User Presence in Synthetic Environments*, edited by G. Riva, F. Davide and W. IJsselsteijn, 3–16, Amsterdam: IOS Press.

Lessiter, Jane et al. 2001. "A Cross-Media Presence Questionnaire: The ITCSense of Presence Inventory." *Presence: Teleoperators, and Virtual Environments* 10: 282-297.

Lombard, Matthew and Theresa Ditton. 1997. "At the heart of it all: The concept of presence." *Journal of Computer Mediated-Communication* [On-line] Available: http://www.ascusc.org/jcmc/vol3/issue2/lombard.html

Merleau-Ponty, Maurice. 1945. *Phénoménologie de la perception*. Paris: Gallimard.

Milgram, Paul and Fumio Kishino. 1994. "A Taxonomy of Mixed Reality Visual Displays." *IEICE Transactions on Information and Systems* 77(12): 1321–9.

Noë, Alva. 2004. *Action in Perception*. Cambridge, MA: MIT Press.

O'Shiel, Daniel. 2022. *The Phenomenology of Virtual Technology. Perception and Imagination in Digital Age*. London: Bloomsbury Academic.

Perri, Trevor. 2013. "Image and Ontology in Merleau-Ponty." *Continental Philosophy Review* 46(1): 75–97.

Romanus, T. Frish et al. 2020. "Mid-Air Haptic Bio-Holograms in Mixed Reality." Cornell University, arXiv, computer science, 6 January. Available online: https://arxiv.org/abs/2001.01441

Shin, Y. et al. 2022. "*Effects of virtual body-representation on motor skill learning*." Sci Rep 12, 15283. https://doi.org/10.1038/s41598-022-19514-9

Slater, Mel. 1999. "Measuring presence: a response to the Witmer and Singer Presence Questionnaire." *Presence: Teleoperators and Virtual Environments* 8: 560-565.

Slater, Mel. 2002. *Siggraph 2002 Course Notes on Understanding Virtual Environments: Immersion, Presence and Performance*. San Antonio, TX: ACM – Siggraph.

Sheridan, Thomas B. 1992. "Musings on telepresence and virtual presence." *Presence: Teleoperators and Virtual Environments* 1: 120-125.

Steeves, James B. 2004. *Imagining Bodies: Merleau-Ponty's Philosophy of Imagination*. Pittsburgh, PA: Duquesne University Press.

Sokolowski, Ronert 1980. "The Issue of Presence." *Journal of Philosophy* 77(10): 631–43.

Wiesing, Lambert. 2010. *Artificial Presence: Philosophical Studies in Image Theory*. Translated by N.F. Schott. Stanford, CA: Stanford University Press.

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