Virtual Reality and the Phenomenon of Presence

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Introduction

Contemporary virtual reality (VR) research highlights technological possibilities and philosophical complexities. Despite advancements, the theoretical understanding of VR experiences is often hindered by oversimplifications of key concepts like presence and immersion. These concepts are central to the VR experience but remain inadequately addressed within a physicalist framework. This article identifies the conceptual gaps between presence and immersion and explores how these gaps might prevent understanding of these concepts. By applying a Husserlian phenomenological lens, I aim to resolve these confusions and provide a framework for understanding the structure of presence. Unlike empirical methodologies, phenomenology focuses on the a priori structures of consciousness, offering a nuanced distinction between immersion and presence with significant implications for theory and practice.

The paradox of VR lies in users engaging with virtual environments as if they were real while remaining aware of their artificiality (Sanchez-Vives and Slater, 2005, p.1). Presence enables users to inhabit virtual spaces meaningfully despite this paradox. However, much of the literature misinterprets presence as either equivalent to immersion or a mere perceptual illusion, lacking the precision of phenomenological analysis. This paper distinguishes immersion from presence by analyzing immersion through the concept of horizons and presence through embodiment and intentionality.

The contribution of this paper is twofold. First, it critiques the conceptual inadequacies in the literature rooted in physicalism. Second, it proposes an alternative framework for theorizing presence using Husserlian phenomenology. Following a review of psychological literature on presence and immersion (§1), I will analyze VR through Husserlian concepts of intentional acts and their features (§2). In §3, I will explore the phenomenological relationship between immersion and horizons using Hopp's theory of conflicting horizons and a Husserlian analysis of image consciousness. Finally, §4 will argue that embodiment and immersion together constitute the structure

of presence.

This phenomenological approach contributes to theoretical discourse and practical applications in VR by deepening the understanding of VR's impact on consciousness. It offers a new perspective on presence. Therefore, it will enhance comprehension of how VR affects the nature of consciousness and immersive experiences.

§1 Literature Review

Virtual Reality (VR) immerses users in computer-generated environments by replacing sensory inputs with digital data (Heim, 1998,p. 2). Using head-mounted displays (HMDs) and motion-tracking devices, users interact with three-dimensional spaces, perceiving visuals, sounds, and spatial awareness in real-time (Heim, 1998, pp. 220-221; Slater et al., 2022, p. 2). Real-time graphics dynamically adapt to user movements in order to enable active navigation and manipulation of virtual objects. Presence, a key concept in VR, refers to the subjective experience of "being there" in a virtual environment while physically in the real world (Coelho et al. 27-28). It arises through two perspectives: the rationalist view, which sees presence as an illusion of non-mediation enabled by technological advances like realistic visuals and real-time feedback (Coelho et al. 28-29; Slater et al., 2022, p. 2), and the psychological view, which considers presence a natural human ability evolved through biology and culture, allowing users to perform actions in virtual worlds similar to real life (Coelho et al. 29-30; Nilsson et al. 122- 125). Immersion, closely linked to presence, describes being absorbed in a virtual environment and losing awareness of the physical world. It has an objective dimension, defined by technological factors like rendering quality and tracking accuracy (Sanchez-Vives and Slater, 2005, p. 4), and a subjective dimension, where users feel profoundly involved and focused on the virtual world (Hovhanisyan et al., 2019, p. 231). While immersion emphasizes technological and experiential absorption, presence captures the phenomenological sense of inhabiting the virtual world. For example, a puzzle game in VR may create immersion through task engagement, but realistic sensory feedback enhances presence, making users feel they inhabit the space. Together, these concepts form the foundation for understanding VR experiences.

§2 Husserlian Concepts

According to Husserl, intentionality is defined as the fundamental property of consciousness. Intentionality refers to the property of being directed toward an

object. Every act of consciousness, such as perceiving something, is always about something. The act of perceiving is considered an intentional act. According to the Husserlian analysis of intentional acts, the four properties of these acts enable us to distinguish between types of conscious and intentional experiences, such as perception, image consciousness, phantasy, memory, and so forth. In subsections, I will explain Husserlian terms "originary," "direct," and "positing."

2.1 Originary vs. Non-Originary Acts

The Husserlian term "originary" refers to an intentional act linked to the immediate nature of perception. Husserl describes originary acts as those in which an object is given "in the flesh" or "in person (Hopp, 2017, 134)." Originary perception thus involves the experience of the object in its entire presence. Non-originary intuition, on the other hand, refers to modes of apprehension where objects are not directly given but are instead re-presented, as in acts of memory or phantasy. Even though non-originary acts can lack originary perception, they might not involve the kind of mediation found in image consciousness. For example, you see a tree in front of you; thus, you perceive the tree in the flesh. Meanwhile, you can imagine the same tree without relying on any medium. Therefore, originary acts are linked to a sense of presence.

2.2 Positing vs. Non-positing Acts

Positing and non-positing acts of consciousness involve asserting the presence of an object as actual or not (Behnke). Consider the act of preparing a party for your friends. You are curious whether the party will succeed or everyone will enjoy themselves. Here, you engage in a non-positing act. If you have a good reason to believe that the party will be successful, firmly believing it will be a successful party is a positing act.

2.3 Direct vs. Indirect Acts

Perception involves a direct apprehension of an object. When one perceives an object, one approaches the object without mental intermediaries. Intentional acts of perception are directly oriented towards the object itself. Meanwhile, indirect perception involves a mode of consciousness in which the perception of an object is indirect through the presence of another entity. For example, while you see an image, you see the image subject in favor of the image object. I will explain this experience in detail later in the image consciousness section.

2.4 Adequacy and Horizons

The adequacy of an object relates to its completeness in intuitive experience. An adequate intuition implies that the object is fully and perfectly given, leaving no further knowledge to be discovered. Physical objects, viewed from different angles, influence perceptual experiences by revealing richer details (Hopp, 2017, pp. 141-142). For instance, a sunset's appearance varies from afar versus up close, illustrating Husserl's idea that inadequate modes of givenness are inherent to spatial objects (Hopp, 2020, pp. 136-138). The more adequately an object is given, the less suitable it is for depiction in an image. Pain, as a sensation, exemplifies adequacy since it lacks unperceived parts. However, images inherently involve unperceived aspects. Horizons, intrinsic to perception, encompass intentions toward parts of objects that are not immediately visible or determined (Hopp, 2020, p. 139). Internal horizons concern an object's hidden or further-determined aspects, like perceiving a table's full texture. External horizons, meanwhile, involve the object's position within its surroundings and its relation to the broader environment (Hopp, 2020, pp. 141-142). Objects cannot be fully perceived without internal horizons, and without external horizons, internal horizons lack context. Together, horizons shape our perceptual experiences, connecting visible and invisible aspects of objects to the world around them.

2.5 The Conditions of Image Consciousness

According to Husserl, image consciousness involves the simultaneous intuitive consciousness of three different objects: "image subject," "image object," and "physical image" (Hopp, 2017, p. 131; Mion, 2018).

2.5.1 Physical Image

The physical image is the physical medium in which the image object is presented (Hopp, 2017, pp. 132-133). It is the physical form in which the image appears, such as a printed photograph, a painting on canvas, marble, or a digital image on a screen. The physical image serves as the medium through which the viewer perceives the image object. Seeing a painting of the Galata Tower hanging on a wall, we are at the level of focusing on the physical material (canvas) of the picture.

2.5.2 Image Object

The image object is the visual content that points to the image subject (Hopp, 2017, pp. 132-133). Thus, the visual structure of the painting conveys information about the image subject. In the example of a painting of the Galata Tower, the image object would be the visual depiction of the Galata Tower. In perceiving a Galata

Tower photograph, I am, besides the "image object," intuitively conscious of the "physical image." In the first place, it seems that through physical images, one can see the depicted object in the image (Hopp, 2020, p. 20). Thus, it covers all the ways it can be perceived through sensory experience. Aspects like its material, texture, and spatial orientation can be explored through physical interaction or observation. However, the image object goes beyond the physical characteristics of the image (Hopp, 2020, p. 20). It includes the mental representations and interpretations that individuals attribute to the image. While exploring the physical image further through actions like turning it over or examining its texture may reveal more about its physical properties, it does not necessarily uncover additional aspects of the image object itself.

2.5.3 Image Subject

Remember the picture hanging on the wall. In this picture, the image subject would be the Galata Tower itself. The image subject is what the image is about or what it depicts (Hopp, 2017, pp. 132-133). According to Husserl, the image subject appears in and with an image. The difference between an image object and an image subject is that an image object is a two- dimensional representation of a scene (Hopp, 2020, p. 20). It is distinct from the actual scene it depicts.

2.5.4 Features of Intentional Experience

According to Husserl, perceptual experiences have some features that differentiate them from other intuitive conscious experiences. The Husserlian term "originary" refers to the direct and immediate nature of perception where the perceiver is directly aware of the object without intermediary representations (Hopp, 2020, pp. 29-30). Therefore, originary perception involves experience where the object is directly present to us as it is (Kinkaid, 2020, 6). However, when we look at the Galata Tower photograph, the tower is not presented physically. Thus, image consciousness is non-originary. Secondly, indirect perception involves a mode of consciousness where the perception of an object is indirect through the presence of another entity. In image consciousness, the experience of the image subject is indirect since it is perceived through the image object (Hopp, 2017, pp. 135-136). Lastly, positing consciousness involves asserting the presence of an object as actual. In image consciousness, positing can refer to the belief or assumption that the image subject depicted in the image exists or has a certain quality (Hopp, 2017, pp. 136-137). It can be either present or absent in the experience of images, depending on whether the viewer takes the image to represent reality or simply as a visual representation.

These four intrinsic features explain the conscious side of image consciousness; however, the emergence of image consciousness depends on resemblance and perceptible conditions to be met (Hopp, 2017, p. 138). The image object must resemble the image subject. The second condition is that we must perceive them differently.

2.5.5 Resemblance

Experiencing resemblances in image consciousness refers to the similarity between an image object and an image subject (Hopp, 2017, p. 138). The resemblance between the representation of the image and the depicted image becomes perceivable through spatial relations such as shape and texture. According to Husserl, the critical point of resemblance is that the image must match the overall structure and shape of the depicted subject (Hopp, 2017, p. 138). Therefore, we can recognize the image subject within the images.

2.5.6 Perceptible Difference

However, a perceptible difference between the image object and the subject is also necessary. If the image object and image subject totally resembled one another, we would experience straightforward perception rather than image consciousness (Hopp, 2017, p. 139). The condition of resemblance enables the connection between the image object and the subject; the perceptible difference introduces distinctive characteristics that set them apart. These characteristics may add variations to the visual experience (Hopp, 2017, p. 139). These variations include colors, shapes, or other contextual elements. Suppose you are holding a photograph of a flower in a grayscale. The lack of color in the photograph contrasts with the vivid color of a real flower. This lack of color is a perceptible difference. Although the photograph of the flower lacks colors, the image object may still capture the shape and form of the flower accurately. Therefore, resemblance creates a connection between the object and the subject. In the next section, I will explain the Husserlian analysis of immersion and how immersion comes from reducing the conflict of horizons in image consciousness

§3 Husserlian Analysis of Immersion

3.1 Conflicting Horizons

Hopp uses Husserl's concept of conflicting horizons to explain how image consciousness involves a conflict between different perceptual apprehensions (Hopp, 2017, pp. 145-147). This conflict is essential for image consciousness to occur.

Husserl identifies two types of conflict in image consciousness. The first conflict is between the image object and the physical thing. The reason for this conflict is that one perceives them differently. The physical thing is perceived as real in the immediate environment, whereas the image object is "irreal." Even if it is perceived, it is not real in space or time, outside or inside of my consciousness (Husserl 23). For example, the physical support of an image as a real object can be moved, viewed, touched, or smelled. However, you cannot smell or touch the image object because it does not have the same spatial and temporal properties as physical supports.

The second conflict is critical for understanding how image consciousness occurs. It involves the same intuitive content or visual appearance conflicting with each other in two distinct perceptual apprehensions (Hopp, 2017, pp. 145-147). Perceptual apprehension refers to the way sensory content is understood. The same sensory content (e.g., color and shapes) provides us with the image object through one perceptual apprehension, while another apprehension reveals the image subject. We see the image subject (Galata Tower) as existing in a different space from our perceived environment. In contrast, the image object is present or in the flesh in our immediate environment. Since the image subject is not physically present, you cannot interact with it in the same way as the image object. This distinct perceptual apprehension emphasizes that the image object is present and tangible while the image subject is detached from the immediate physical environment.

From a horizontal perspective, the internal and external horizons of the image object and subject lead to phenomenological conflict due to their inadequacy (Hopp, 2017, pp. 147– 148). For example, you see the Nighthawks in the museum. In this picture, we see a depiction of a night diner. In the place, there are two men and women drinking coffee with the server in the coffee shop. The physical thing of the painting is made of canvas, and you perceive this painting in your environment(museum). You can move closer to the image and change your angle to examine its detail. Through these acts, you will fulfill the horizons related to the image object. However, the image subject remains fixed even if you change your angle; it will only reveal more details about the picture since a few men and women are not present in the flesh or your environment. In other words, moving closer to the picture does not bring you closer to the coffee shop. Changing the angle around the painting does not change your view of the scene. Therefore, the horizon of the image object can be fulfilled by shifts in perspective and movements; the image subject does not share the same spatial and perceptual relations with the image

object. Therefore, if the image subject had the same spatial and perceptual properties as the image object, you could start walking around the corner of the café. Image consciousness is, therefore, distinct from perceptual experience.

3.2 Phenomenological Explanation of Immersion

Immersion in VR can be analyzed using the Husserlian concept of horizon because it provides a sense of "beyond" or potentialities. First, I will explain the simulated depth and environment from a horizonal perspective. In this, I will explain the user's dynamic interaction with virtual objects and the continuity of the virtual space. I will bring the "flow" concept from psychology in VR to understand the concept of immersion from an interdisciplinary point of view. In the second part, I will identify the similar phenomenological aspects of conflicting horizons in VR and image consciousness in order to explore immersive experiences phenomenologically. Therefore, I will show why immersion is a structural part of the presence in VR rather than being identical to the presence or an entirely different unrelated concept.

Immersion in VR can be analyzed through the Husserlian concept of horizon, which emphasizes the "beyond" or potentialities within perception. Simulated depth and spatial relationships in VR create an external horizon akin to real-world perception. From the user's perspective, the virtual environment extends beyond their immediate field of vision, offering depth and layered interactions (Slater et al., 2022, p.2-3). This dynamic space encourages exploration and engagement, aligning with Husserl's notion of horizons emerging through perception and action. For instance, interacting with a virtual object, such as picking up a glass, reveals unseen details as perspectives shift. Like a table or surroundings, the glass's relationship to its environment represents an external horizon enriched through dynamic interaction.

Husserlian horizons are not static but are fulfilled incrementally as users perceive and explore. Similarly, VR maintains a sense of spatial and temporal continuity, reinforcing the perception of a unified, navigable space (Weibel and Wissmath, 2011, pp. 2-4). Even when only parts of the environment are rendered upon approach, VR creates the illusion of a continuous, immersive world. This mirrors the phenomenological idea of horizons, where objects are perceived in parts rather than as a whole, driving active exploration. The incompleteness or "inadequacy" of virtual horizons ensures users remain aware of unfulfilled potential, fostering an immersive experience. By maintaining this phenomenological uncertainty, VR aligns with the structure of perceptual horizons,

where immersion becomes an integral part of presence rather than an entirely distinct concept.

3.3 Conflicting Horizons in Other Media

This section will examine other media or immersion-involved experiences, such as reading books and watching films. While you are reading a book, you are in the experience of narrative immersion (Nilsson et al. 113-114). This type of immersion includes the ability to alternate the reader's attention to physical reality into the fictional world created by the author. For example, you are reading a book about the adventure of a guy in the world of elves and orcs. Well-written plots with a precise sequence of events and conflicts in the fiction will help the readers to maintain the reader's focus on adventure. Visualization of the sequence of events, the descriptions of the views, and the characters enable readers to be immersed in a fictional world. Therefore, while following the adventure, you are disconnecting from physical reality. You will focus your attention intensely on the main character's adventure. Therefore, even if it lacks a high level of sensory stimulus regarding technological capacities, you feel immersed in the fictional world.

While watching the movie Interstellar in IMAX, you constantly get sensory feedback from the theatre. The higher sensory feedback, such as auditory and visual, you feel like a witness of the story even if you are not in their physical world. The image object and subject constantly move, and the higher sensory feedback closer to you feel immersed in their reality. However, the conflicting horizon in the image subject and object can be seen as similar in the image consciousness since images are given to you constantly. However, the big difference is that constant visual and auditory feedback from the scene allows you to disconnect from physical reality and get closer to the world of the film.

Being deeply drawn into Interstellar stories, characters, and events will produce a sense of being part of the cinematic world. While the story unfolds through the movie, the technological capacity of the IMAX format advances this experience by giving sensory and auditory inputs to make viewers feel as if they are part of the interstellar journey. Thus, in this sense, you feel immersed in the cinematic universe. However, since it is similar to image consciousness, you will not feel the presence in the cinematic universe because the universe of Interstellar is not in your immediate environment.

In the following section, I will explore the conflicting horizons in VR to present a clear phenomenological aspect of the immersive experience.

3.4 Conflicting Horizons in Virtual Reality

The concept of conflicting horizons in image consciousness can be quite revealing for understanding immersive experiences in virtual reality. First, in virtual reality, the user is between two realities. The first reality is the physical environment they are physically in. The second is virtual reality, the computer-generated environment in which they interact. This dual experience does not create conflicting horizons. In virtual reality, we can posit two interpretations of sensory content (visual, auditory, and sometimes tactile)—one for virtual and one for physical environments. For example, the user is confronted with a virtual table in the virtual world. When moving around the virtual table, a user moves as if there is a physical table in the room. Even though he knows he is not in the physical environment, he sees a virtual table. This situation resembles the conflict found in image consciousness, where the "image object" (representation) and the "image subject" (depicted object) are in conflicting perceptual relations.

However, this conflict is also different from traditional image consciousness. It allows users to interact spatially with virtual objects in a coherent way. Users can move around these objects, see them from multiple perspectives, and interact with them in the same way as with real objects. This kind of spatial interaction deepens immersion by allowing virtual objects to become part of the user's perceptual space as if they were physically present. This situation is significantly different from image subjects, where no matter how we look at an image of an object (such as the Nighthawks), we only see different aspects of the image and do not have access to the "real" object beyond the representation. You cannot move around an image of the Nighthawks and see different aspects of the actual coffee shop. Instead, you can see different aspects of the image object. In other words, you do not feel immersed in the reality of the image. As a result, the horizon of a virtual reality object—unlike an image—can be filled, allowing users to explore and perceive it spatially. The user sees the table as a reality and acts accordingly. The external horizon in the physical world does not conflict with the inner horizon in the virtual world since the stimulation of the physical world is less than the stimulation of the virtual world. Therefore, you feel disconnected from the physical world and become engaged and immersed in a virtual environment.

Immersion, as I understand it, constitutes two interrelated dimensions within the VR. On the one hand, it is a feature of the VR system designed to integrate the user into the VR world. On the other hand, it is also related to the user's subjective response to the VR environment. From a phenomenological perspective, the essence

is that it reduces our sensory connection with the physical world and allows us to alternate our sensory connection with the virtual world. Equating immersion in VR with technology does not mean that immersion in VR cannot be evaluated through a subjective experience. Indeed, the subjective experience of immersion can be experienced in many different types of media.

Consider the immersive experiences we experienced in different media types in the previous section. At the same time, the sensory feedback we get while reading a book is minimal. The reader may still undergo an immersive experience formed by imagination and engagement with the novel. Moreover, we get a different set of immersive experiences in cinema thanks to the technological apparatus-such as cinematic screen and sound systems – that can advance the sensory input. Thus, while immersion derived from reading a book can be an example of a subjective experience, the technological apparatus of the cinema objectively increases our immersive state. Overall, the technological and subjective sides of immersion influence the state of being immersed in another world. In the following section, I will explain the concept of flow to understand absorption from physical reality. Therefore, the difference between presence and immersion will be clearer.

3.5 Flow and Immersion

"Flow" describes a mental state where individuals are fully immersed in a virtual environment, experiencing high concentration, clear goals, and a loss of self-consciousness (Weibel and Wissmath, 2011, pp. 2-4; Mütterlein, 2018, pp. 1048-1409). In this state, the user's attention is entirely focused on the virtual world, with distractions from the physical environment minimized or absent, enhancing immersion. Users often feel highly engaged and motivated, losing track of time—a key indicator of an immersive experience (Weibel and Wissmath, 2011, pp. 2-4). This is facilitated by VR technology, which provides clear goals and immediate feedback. Actions within the virtual world, such as navigating or interacting with objects, elicit instant responses, reinforcing user engagement and focus. As the activity itself becomes inherently rewarding, the sense of immersion deepens. Immersive experiences align with the perceptual horizon as technological advancements make the simulated environment increasingly realistic. When users' intuitions about unseen aspects of the virtual world are fulfilled, their level of immersion and sense of flow intensifies. In general, the concept of flow helps conceptualizing immersion as the

subjective experience of feeling surrounded by the environment and engaged with the activities within the virtual realm, even if you are in physical reality. Fundamentally, it refers to being deeply engaged in virtual activities. Meanwhile, presence stands user's perception of being present in the virtual environment itself. For a user to feel present in that environment, the user must be immersed in the activities within that environment. Now, I will present immersion as a structural part of the experience of presence in the following subsection.

3.6 Immersion as a Structural Part of Presence in VR

At the point of conflicting horizons, the phenomenological approach to immersion has this to say. It reveals that immersion is not an isolated feature of presence but a structural element necessary for experiencing presence. As in our perception of the real world, horizons allow us to grasp the totality of things and suggest that more lies beyond what is currently visible. Virtual reality offers similarly rich horizonal intentions. Thus, it supports users in exploring virtual space in ways consistent with the internal logic and rules of the virtual world.

These horizons often conflict less with the boundaries of the physical world, such as the user's awareness of the physical room around them. In virtual reality, the user's horizons are rich. The richness provides continuity and keeps the user engaged with the feeling that there is more to explore. The horizon of the virtual environment has less conflict with the horizon of the physical world compared to image consciousness. The consistency of the virtual environment allows users to prioritize the virtual horizon over the physical horizon momentarily.

In conclusion, the user feels immersed in the virtual environment through a head- mounted display that generates high-resolution visuals, spatial audio, and haptic feedback. These multisensory inputs allow users to interact with and feel surrounded by the environment. This absorption helps you feel like you are in virtual rather than physical reality. Thus, we can conclude that immersion is necessary to create a sense of presence, but it is insufficient. For example, you are playing a race simulation game with poorly designed car physics and mistimed sound effects. The lack of realism and consistency will prevent immersion since it is difficult to achieve the state of "flow." Lack of flow will negatively affect the feeling of being in virtual gameplay. Conversely, even with highly immersive technology, you might not feel fully present in the virtual environment due to external distractions such as daily worries. Thus, we can conclude that even if you feel immersed in virtual reality, the sense of presence needs the mental focus and coherence of virtual experience.

§4 Husserl and Embodiment

In Husserl's view, awareness of embodiment is key to understanding how we perceive and awareness of ourselves concerning embodiment, which is key to understanding how we perceive and have an awareness of ourselves in relation to the world (Carman, 1999, 206). The body is an intermediary tool to enable embodiment. Husserl understands the body as a unique entity with a function. The body bridges our conscious experiences and the physical world (Carman, 1999, 217). It is neither part of our consciousness nor entirely different from other physical objects. This unique function plays a role in localizing our sensations (Carman, 1999, 211). Husserl considers these sensations fundamental to our sense of self and bodily awareness. Therefore, the body is an intermediary that supports the conscious experience; however, it does not constitute it (Carman,1999, 224).

Husserl explains the concept of bodily intentionality as playing a role in the perception of and interaction with the world (Carman, 1999, 208). The main idea of intentionality is that our bodily movements and sensations are directed toward the environment. Therefore, it is not merely an object among the other physical objects but essential for perceiving and understanding the world (Carman, 1999, 218). For example, when we reach out to touch a glass of wine to drink, our body does not perform mechanical action. Instead, it is directed toward a glass of wine. This intentional aspect of it is not the distinct aspect of conscious experience.

According to A.D Smith, our perceptual consciousness arises from the spatial relationship between objects and our sense-organs (Smith 2005 134-135). For example, while seeing objects at different distances from our eyes, one will understand objects as three- dimensional objects. For example, you consider picking a glass of wine from the table. As you move your hand toward wine, your perception will set according to the spatial relationship among your hand, the glass, and your sense organs. While holding it, you see the glass from a specific perspective. In the meantime, you feel its smooth surface and the weight of the glass in your hand. The interaction between you and the object is about perceiving it as a three- dimensional object existing in space (Smith, 2005, pp. 140-141). Your movement of sense organs toward an object makes perception distinct from mere sensation, such as feeling, by gaining different perspectives on objects.

The embodied nature of perception reveals the object and your bodily presence through shared spatial interactions (Smith, 2005, pp. 134-135). While holding the glass of wine, you experience the pressure of the glass when the glass touches your hand. The pressure indicates the presence of external objects, such as

glass. Therefore, it reveals the glass as distinct from your body. Anstoss is the experience of encountering the pressure that reveals the glass as an external object (Smith, 2005, pp. 103-104). This interaction illustrates how our perceptual consciousness is formed through bodily activity and the external environment.

Transforming the embodiment in physical reality to virtual reality will enhance the sense of embodiment and, as a result, our sense of presence. For example, you are climbing a virtual replicate of the mountain of Everest. The system must have coherent motion tracking to set our visual perspective while reaching the rock. Therefore, the user achieves a coherent sense of spatial awareness. To achieve tactile connection with virtual objects, the haptic feedback must simulate the rough texture and pressure of the rock while climbing. Feeling the resistance of the rock allows you to understand it as an external object and your body in the same spatial domain. Therefore, users understand and interact actively rather than passively with the virtual environment. As a result of understanding embodiment and integrating these actions into the virtual realm, our perceptual consciousness gradually becomes similar to real life.

§5 Presence as Phenomenon

In this section, I defend that presence arises when embodiment and immersion work in harmony. Embodiment refers to integrating bodily interaction with the environment, while immersion is about being surrounded by a virtual environment. For example, when climbing a mountain, you get high-resolution graphics that match your movement at the exact moment of climbing. Meanwhile, you will get the sound of your steps and the sound and feel of the wind as the spatial sound of the virtual environment. Meanwhile, your subjective interaction with the environment will measure the value of your reactions. At the same time, the change of sound and image every time you hit your pickaxe will enhance your objective immersive quality. In this way, your interaction with the physical world will gradually decrease, and your interaction with the virtual world will increase. During climbing actions, the haptic feedback you receive through your avatar's body will put objects in a different spatial dimension to your body. The sensory feedback you get with each step will change your angle to the object before you, and you will be more integrated into the virtual world. These two phenomena will facilitate your active interaction with the virtual environment, and you will get an experience close to what we experience in the real world.

However, this interaction will not require defining presence in the literature as an illusion. I think presence cannot be reduced to a psychological trick or a

sensory manipulation. Instead, it is a fundamental mode of how consciousness positions itself concerning its physical or virtual environment. As we have seen in the psychological literature, a sense of presence is also part of our relationship with the physical world (Riva et al. 207-211). Immersion allows this part to move from one world to another. Consciousness relates to the world through embodied and enveloping dynamics as long as it receives sensory feedback in an ontologically different world. This makes presence a fundamental feature of experience rather than an incidental by-product of technological mediation.

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