10 From Immersive Body Swapping to Apprehending the Other's Emotions

Perspective-Taking and Levels of Empathy in Embodied Virtual Reality

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10.1 Introduction

Natural scientists working at the intersection of virtual reality (VR), psychology, and computer science have recently explored the question of whether embodied virtual reality (EVR) can be employed to train empathy.[1] Yet, opinions are divided in this debate between those who establish a link between EVR and empathy and those who regard this link with skepticism.

On the one hand, authors such as Bertrand et al. (2018) argue that EVR can enhance empathy. In their view, EVR leads users to adopt the other's perspective and resonate with her experience. For these authors, applying multisensory and motor stimuli synchronically with the first-person perspective of an avatar, immersive VR might lead to a series of perceptual illusions, which generate in its users the impression of swapping bodies with the avatar (Lenggenhager et al. 2007; Maselli and Slater 2013). In this vein, Maister et al. (2014) exposed participants to bodily illusions that induced ownership over the body of another person pertaining to an outgroup regarding gender, age, or race. As a result, participants experienced a reduction in biases against that outgroup. This shift of perspective enabled by EVR makes it a powerful tool to reduce negative biases or increase positive responses toward individuals who are very different from us. As Bertrand et al. have put it: "Experiences of EVR allow users to literally step into the shoes of others and see the world from their perspective. Research on EVR has explored how manipulations of the senses can be used to modulate empathic responses" (Bertrand et al. 2018, 10).

On the other hand, authors such as Sutherland (2016) and Sora-Domenjó (2022) have been more skeptical about the powers of EVR to increase empathy in its users. In an attempt to demystify the powers of VR to foster empathy, Sora-Domenjó has argued that

> there is little empirical evidence of a correlation between VR exposure and an increase in empathy that motivates pro-social

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> behavior, and a lack of research covering VR films exposure eliciting empathy. Furthermore, the results show an alarming lack of research into the long-term effects of VR films and other VR immersive experiences.
>
> (Sora Domenjó 2022)

Despite acknowledging that VR is a powerful tool for perspective-shifting, it is still subject to cultural biases, stress, and so on. He concludes that "based on current research it's premature at this early stage to consider VR as a medium that elicits empathy over other media such as cinema, television or photography. Empirical evidence supporting the claim that immersive storytelling experiences enhances empathy is limited" (Sora Domenjó 2022, 10). For him, the mechanisms involved in VR neither lead to a better understanding of another person's feelings nor do they lead to a greater arousal of empathy. In his view, the contemporary debate on the link between VR and empathy, which is marked by the lack of a solid understanding of what empathy means, should acknowledge the complexity of empathy, and the term should not be deployed in a blurry and superficial sense.

Taking Sora-Domenjó's desideratum as a point of departure, this chapter explores how perspective-taking contributes to empathy in EVR.[2] In my view, the recent debate on EVR can be enriched with phenomenological insights on how perspective-taking takes place at different levels of empathy. Drawing on classical and contemporary phenomenology and in particular the works of Stein (1989) and Svenaeus (2018), the chapter applies to the EVR debate a distinction between sensual and emotional empathy. While in sensual empathy, the user empathizes with the other's lived body, in emotional empathy, she apprehends the other's emotional states and their related values. It is argued that while the perceptual illusions elicited by EVR can lead the user to the impression of a body swap and, in so doing, foster sensual empathy, for the apprehension of the other's emotions in emotional empathy, EVR must be supplemented with a series of narrative devices that make the other's emotions and values accessible to her.

The next section begins by exploring the role of perspective-taking in contemporary accounts of empathy (section 10.2). Next, I offer a micro-analysis of perspective-taking in non-virtual (section 10.3) as well as in virtual environments (section 10.4). The phenomenological distinction between sensual and emotional empathy as levels of empathy is then introduced (section 10.5). I argue that EVR fosters a form of perspective-taking that leads to sensual empathy but that to foster emotional empathy, narrative techniques must be involved (section 10.6). The conclusions summarize the main findings (section 10.7).

10.2 In the Other's Shoes: Perspective-Taking in Contemporary Accounts of Empathy

Philosophical debate about empathy has been marked by strong controversies regarding how the apprehension of the other's experience takes place, and not all theories draw on perspective-taking to explain empathy.[3]

During the 1990s, the debate was dominated mainly by the Theory-Theory (TT) and the Simulation Theory (ST). The TT argues that empathy requires that we have a folk psychological theory of mind about the other with whom we empathize (Carruthers and Smith 1996). For the TT, perspective-taking is not necessary for empathy. By contrast, according to the ST, which draws on Lipps' imitation theory, we need to re-create, re-enact, or simulate what the other is going through (Goldman 2006; Stueber 2006). Traditionally, as understood by Lipps (1903) in his imitation theory, which can be regarded as a proto-simulationist account of empathy, empathy requires "feeling into" the empathized object and imitating its feelings. The idea of "feeling into" can be explained in terms of a projection into the other's situation. Most of today's proponents of ST argue that for empathy to take place, the subject must put herself in the other's shoes.[4] In other words, empathy requires that we adopt the other's perspective.

Of the two theories, TT has lost momentum given that it leads to an over-intellectualization of the understanding of other people. Indeed, it is often the case that we can understand what the other is going through without having a theory of mind about it. Moreover, TT conflates empathy with mindreading. Unlike TT, ST remains an option in current research. As a result, perspective-taking is regarded as a necessary step in the empathic process.

In the last couple of decades, however, the Direct Perception Theory (DPT) has emerged as an alternative to the ST. According to the DPT, which builds on Scheler's (2008) phenomenological views, we can directly perceive in the other's expressions what she is going through (Zahavi 2011). For the DPT, perspective-taking is not necessary for empathy insofar as we can directly see the other's emotions in their expressive movements.

Though in the current debate proponents of the ST and the DPT present both mechanisms as offering alternative explanations of the apprehension of the other's experience, it is also possible to regard them as complementary. While the DPT can explain basic forms of empathy in which we immediately see what the other is experiencing (e.g., we see the sadness in the other's face), more complex forms of empathy, as argued by the ST, require us to project ourselves into the other's experience and re-enact what the other is going through. In this vein, there is a distinction made between basic empathy and re-enactive empathy.

Moreover, there are theories which can be regarded as endorsing a hybrid model in which both mechanisms are involved. For instance, Stein (1989) and some contemporary proponents of her view (e.g., Magrì 2018; Svenaeus 2018; Vendrell Ferran 2015) regard empathy as a process that evolves in stages. It starts with a – usually vague – perception of the other's experience. This first apprehension of what the other is going through can be made more accurate by means of transferring ourselves into the other's situation, i.e., by means of adopting the other's perspective. Finally, we come to grasp in a more nuanced way what the other is going through. In this vein, perspective-taking can enable a more accurate apprehension of the other's experience.[5]

To sum up, in today's research, perspective-taking is central for proponents of the ST and for those endorsing a hybrid model of empathy, such as the view of empathy as a process which starts with a perception of what the other is going through but whose completion requires the empathizer to put herself in the other's shoes.

10.3 A Micro-Analysis of Perspective-Taking in Non-Virtual Environments

Perspective-taking is not a homogeneous mental state. In fact, what in the debate is usually called "perspective-taking" and which traditionally has been described as "putting oneself in the other's shoes" entails different stages and imaginative activities, which I will refer to here as perspective-building, projection, and resonance.

10.3.1 Perspective-Building

Perspective-shifting requires first of all that we re-present to ourselves what the other is going through. In representing what the other is going through, the empathizer reconstructs in her mind the other's perspective.[6] This re-presentation necessarily entails imaginings of different types: propositional imaginings such as imagining that X is the case, imagining the other realizing an action, imagining the other experiencing something, and so on. In this re-presentation of the other's experience, we imagine "from the outside" and do not adopt the other's perspective. However, we cannot imagine "from the inside" without first re-presenting to ourselves what the other is going through.

Importantly, the re-presentation of the other's experience might differ in its "scope" (Vendrell Ferran 2023).[7] It can re-present a single experience such as a perception, imagining, emotion, belief, etc., or a combination of experiences such as a set of perceptions and emotions or a set of beliefs and desires. It can also re-present a set of possible experiences which are

characteristic of the way in which the other engages with her environment (the other's heart).

In addition, the re-presentation of the other's experience can be motivated by different cognitive phenomena such as a perception, an imagining, belief, memory, etc. Thus, it can be the case that the empathizer sees the other's situation, hears about it, imagines it, knows about it, remembers it, etc.

10.3.2 Projection

Once the other's perspective is re-presented to our mind, the empathizer can project herself into it. This is what the expression "in the other's shoes" literally means. The empathizer here not only imagines what the other is going through but she adopts the other's perspective. This imagining being in the other's place is an imagining "from the inside."[8] In the relevant literature, there is a distinction between "self-" and "other-oriented perspective-shifting" (Coplan 2011). While in self-oriented perspective-shifting, I imagine how it would be for me to be in the other's situation, in other-oriented perspective-shifting, I imagine how it is for the other.

Some authors have argued that other-oriented perspective-shifting is not possible, either because we do not have information about the other or because in order to construct the other's experience we have to resort to our own experience and our psychology can be very different from that of the other so that we end up imagining the other, but this imagined other has nothing to do with the real other. Moreover, for Goldie (2011), other-oriented perspective-shifting is not desirable because if we imagine to be the other, then in empathy the distinction between self and other vanishes, so that empathy as such does not take place. Though I think that we should be aware of these criticisms, in this chapter, I will adopt the distinction between both forms of perspective-shifting for analytical purposes. To begin, though other-oriented perspective-shifting requires that we leave aside our individual empirical self and we cannot renounce the person we are, a step toward other-oriented perspective-shifting can be made possible by gathering information about the other and by abstracting momentarily from our selves. Moreover, we can keep the self–other differentiation necessary for empathy by means of switching perspectives.

10.3.3 Resonance

In adopting the other's perspective, we imagine "from the inside" what the other is going through. Imagining from the inside is the hallmark of

"experiential imagining" (Kind 2016). This means that we not only imagine the other's experience but we imagine it experientially, i.e., we imagine undergoing it. In this respect, the empathizer comes to re-create, re-enact, or simulate the other's experience by re-living it. In recreating the other's experience, the empathizer simulates the other's perceptions, emotions, beliefs, and so on. These recreated mental states are often described in terms of "quasi-perceptions," "quasi-emotions," "quasi-beliefs," etc. This experiential imagining leads to a vicarious experience of what the other is going through. Experientially imagining X generates an X-like state.[9] Thus, if we imagine experiencing the other's perceptions, emotions, desires, etc., we generate a similar state in us.[10] This re-creation of the other's experience motivated by perspective-shifting is what leads us to resonate with the other's experience.[11]

I will come back to this distinction between different steps in the process of perspective-taking below when analyzing the role of EVR for empathy.

10.4 Perspective-Taking in EVR: The Illusions of Presence, Embodiment, and Agency

Let's take the established view on perspective-taking in non-virtual environments and apply it to perspective-taking in virtual contexts. As noted in the Introduction, EVR enables us to put ourselves in the other's shoes. By means of different audiovisual and motor devices, such as an oculus rift, headphones, etc., we can adopt the other's perspective, creating the impression of swapping perspectives with the other. These technological devices enable the user to "feel into" the other's situation so that the EVR user has the impression that a real perspective-shifting is occurring. How does perspective-shifting happen in virtual environments compared to in non-virtual environments?

10.4.1 Perspective-Building in EVR

In virtual environments, the perspective-shifting exhibits a series of particularities. To begin with, in virtual environments, the first step of perspective-shifting, which I referred to above as perspective-building, requires a particular interplay of perception and imagination. Indeed, in EVR, some aspects of what the other is going through are made accessible by means of the audiovisual and sensory devices. These techniques enable the user to perceive what the avatar is perceiving. We have access to what the other sees, hears, and so on. However, this access is limited to certain sensations and, relatedly, to the spatial localization of the other.

For mental states other than perceptions, the user is required to imagine. For instance, using an oculus rift, the user can see what the other is supposed to see. Yet, she does not have access to the other's beliefs, expectations, or emotions. Such mental states have to be imagined by the user in order to re-present to herself what the other is going through. As a result, the construction of the other's experience takes place with the aid of technical devices in EVR. By contrast, in non-virtual environments, the empathizer can build the other's experience by means that do not necessarily involve perception. For instance, the empathizer can imagine, remember, suppose, etc., what the other is going through but does not necessarily have to perceive the other's situation. In addition, the use of technical devices is less prominent in non-virtual environments than in virtual ones.

The involvement of technical devices plays an important role in determining what I called above the scope of the other's experience. More precisely, the transmitted scope is limited to perceptual experiences. Basically, EVR will provide us with single perceptual experiences or combinations of perceptual experiences. For instance, by means of an oculus rift, the user sees what the other sees, or by means of headphones, she hears what the other hears, etc., or an oculus rift and headphones can be combined. These perceptions give the user the impression of being "on the inside," i.e., of embodying the other's perspective. As argued in the literature, this sense of embodiment entails the sense of self-location, the sense of agency, and the sense of body ownership (Bertrand et al. 2018; Kilteni, Groten, and Slater 2012). For proponents of simulationism, this means that perspective-taking takes place in virtual environments on the basis of perceptions. For proponents of the hybrid model of empathy, this means that, at the first step, what is presented by our perception is not vague but accurate, albeit limited in its scope.

10.4.2 Projection in EVR

The perceptions mediated by the different technical devices enable the user to adopt the other's perspective. The user sees, hears, etc. the world as the other does. The user "feels into" the other's experience. At this stage, the perceptions enabled by EVR are responsible for a series of illusions, which Bertrand et al. (2018) have classified as illusions of presence, embodiment, and agency.

10.4.2.1 Illusion of Presence

In VR, in the expression "illusion of presence," presence is not necessarily related to having a body, but as the feeling of "being there." Slater (2009) distinguishes between "Perceptual Illusion" (PI) as the illusion of being in a place which is constrained by sensorimotor contingencies of VR, and

the "Plausibility Illusion" (Psi), which is the credibility of the scenario and concerns the illusion that the scenario is taking place.[12]

10.4.2.2 Body Ownership Illusion

The body ownership illusion consists in the feeling of owning an artificial body which acts as a substitute for the real body as the origin of perceptual sensations (Maselli and Slater 2013). For the body ownership illusion, multisensory and motor stimuli have been applied in synchronicity with the first-person perspective of an avatar. This can occur by means of computer-generated imagery (Maselli and Slater 2013) or through the image of a real human (Petkova and Ehrsson 2008). As argued by Bertrand et al., the most explored mechanism is visuomotor synchronicity (here we see ourselves in the body of an avatar who mimics our movements in real time) and visuotactile synchronicity (we see tactile stimuli applied to the avatar at the same time which is applied to the user's congruent body part). Importantly, as shown by Maselli and Slater (2013) in their study of the perceptual components of the full body ownership illusion as a specific type of bodily illusion in which a user experiences an artificial body as if it were her own, a combination of stimuli can promote embodiment illusions but do not always require visuomotor or visuotactile stimulation. Incongruent perception does not break the bodily illusion.[13] Embodiment might occur voluntarily or involuntarily.

10.4.2.3 Agency Illusion

Agency illusion is different from the embodiment illusion (Sato and Yasuda 2005). Agency is voluntary. Bertrand et al. (2018) describe the illusion in the following terms: "By embodying a digital avatar that could be controlled by the user's movements, researchers observed self-attribution of agency to subjects over actions taken by the avatar, even without any prior intention, prediction, priming, and cause preceding effect" (Banakou and Slater 2014). According to their experiment, the digital avatar would speak independently of the user's action creating not only the perception that subjects were themselves talking, but also changing the fundamental frequency of the user's voice after the experience. This illusion was found to be even stronger when a vibration stimulus was applied to the user's throat in synchronicity with the avatar's voice.

Importantly, in contrast to what occurs in non-virtual environments in which perspective-taking relies heavily on imagination, given these illusions, in virtual contexts, the user does not imagine how it would be for her to see, hear, etc., if she were in the other's situation; rather, she really sees, hears, etc., what the other is supposed to see, hear, etc. This leads

to an interesting interplay of self- and other-oriented perspective-taking. In having the illusions, the empathizer in virtual contexts might have the impression that she is undergoing the avatar's experience. Yet, for empathy to take place, other-oriented perspective-taking is necessary. Thus, the empathizer must realize each time that not only is she having these experiences but that these experiences belong to the other. She must have the impression of swapping perspectives with the other while maintaining the self–other differentiation.

10.4.3 Resonance in EVR

The empathizer does not just experience a recreation of what the other is going through; she has the impression of actually undergoing the same perceptions as the other. Thus, we do not have a quasi-perception of the other's visual, auditory, etc., perception; we have the illusion of perceiving like the other does.

In this respect, EVR offers a powerful tool to experience what the other is going through. The user ends up having the impression of putting herself in the other's shoes and generates in this way a body swap. Yet, is this enough to argue that EVR is helpful to train empathy? As I shall argue, we need an accurate analysis of how perspective-taking plays a role in empathy.

10.5 Sensual and Emotional Empathy: Perspective-Taking and Levels of Empathy in Phenomenology

Having described the phenomenon of perspective-shifting in the previous section, in this section, I introduce and elaborate on a distinction between two levels of empathy found in classical and contemporary phenomenology, which Stein (1989) and Svenaeus (2018) refer to as sensual and emotional empathy. This distinction will be useful for understanding empathy in EVR. Here, my aim is to argue that the phenomenon we call "perspective-taking," which is central to putting ourselves in the other's shoes, can take place at two different levels.

10.5.1 Sensual Empathy

The term "sensual empathy" (Empfindungseinfühlung) (Stein 1989, 65) is introduced by Stein to describe empathy with the other's lived body. With the concept of sensual empathy, she describes the possibility of empathizing with the sensual experience of another living being, something that has been often overlooked in the research. Indeed, the debate on empathy has been mainly focused on the possibility of empathizing with the

other's affective states.[14] Yet, for Stein, it is possible for a form of empathy that targets the other's lived bodily experiences such as perceptions and sensations.

In phenomenology, the lived body describes how the body is given in the first-person perspective. As such, it is distinguished from the physical body, which is the body given in the third-person perspective. While the lived body indicates the subjective experience of one's own body and its surroundings independently of sensory perception, the physical body is the body given through external perception by means of seeing, hearing, touching, etc. While the lived body is a particular form of consciousness of our body and its surroundings (Scheler 1973) which is not measurable, the physical body can be measured and is observable.

According to Stein, the other is given to us as a lived body with her fields of sensation located at a zero point of orientation in her spatial world, a field of expression of the experiences of the "I" and an instrument of the will (Stein 1989, 57). In her view, in perceiving the fields of sensation of the other, we are able to grasp the implicit tendencies in her movements. In so doing, we can apprehend what the other is going through at the sensory level. It is precisely because the other is given to us as a lived body like ours that sensual empathy is possible. In Stein, we can modify the real properties of our physical body in the imagination. In this regard, Svenaeus (2018, 748) writes:

> Sensual empathy is a process of recognition and understanding that takes place on the level of embodied existence when one lived body feels and perceives the presence of another lived body and follows its experiences through in a spontaneous manner.

Sensual empathy in this sense is not to be conflated with motor empathy. Motor empathy consists in unconsciously and automatically adopting the other's expressions. By contrast, sensual empathy is a much more complex process of projecting ourselves in the other's lived body while maintaining the distinction between self and other.

In Stein's model, we are able to empathize not just with the other's field of sensations, but also with her position as a zero point of orientation and her will. Empathizing with the other's body as a living body placed in the spatial outer world presupposes that we "transfer" ourselves, i.e., put ourselves in the other's zero point of orientation. In so doing, the empathizer gets a new image of the spatial world which corresponds to the other's position within it and becomes a sense of agency.

In Stein's account, this transfer and the recreation of what the other is going through is not merely an imaginative exercise. The new

orientation and the image of the world gained through it are not merely the product of imaginings. In fact, as she puts it, it is "con-primordial, because the living body to which it refers is perceived as a physical body at the same time and because it is given primordially to the other 'I', even though non-primordially to me" (Stein 1989, 61–62). As a result, once the empathizer has projected herself into the other's perspective, she does not imagine how it is the world for the other, but she is able to live it from the other's point of view. In this respect, there is a significant difference between Stein and proponents of simulationism for whom empathy enables us to experientially imagine how the world looks from the other's perspective. As Stein puts it: "The world I glimpse empathically is an existing world, posited as having being like the world primordially perceived" (1989, 63–64). Thus, the perspective of the other's world obtained through empathy is not just a modification of one's own perspective by means of imaginings. What we glimpse is the other's real world.

Sensual empathy can take place in different degrees of accuracy. Human beings are able to empathize better with other human beings by virtue of having a human body than with non-human ones: "the further I deviate from the type 'human being' the smaller does the number of possibilities of fulfillment become" (Stein 1989, 59). Attempts to empathize with the other's human hand will probably be more accurate than our attempts to empathize with a dog's paw. Given that we have a human hand ourselves, we are familiar with the kind of sensations the other is experiencing in the first-person perspective. By contrast, though I can imagine how it might feel to have a dog's paw, my empathy will be less accurate because we do not have paws ourselves. In fact, for Stein, certain movements and positions are given to me as "empty presentations without the possibility of fulfillment" (1989, 59).

In my view, for sensual empathy to take place with accuracy, perspective-taking plays a crucial role. As mentioned above, the direct perception of the other's experience might remain quite vague, so that for an accurate and comprehensive understanding of what the other is going through, the empathizer has to put herself in the other's place. This is certainly true if we adopt Stein's model of empathy as a process insofar as the second stage involves what I call here perspective-taking. But it is also true in the case of the pure simulationist for whom empathy can be explained via simulation and does not involve a first-level perception of the other's experience.

10.5.2 Emotional Empathy

Stein uses the term "emotional empathy" to describe empathy with the other's affective experiences. Emotional empathy is what contemporary

research usually refers to as empathy. While the question of whether or not we can empathize with the other's cognitive states such as perceptions and beliefs is controversial, philosophers of empathy usually think of it in terms of targeting the other's affective states.

An important aspect of Stein's account is that, for her, affective states are linked to values. This aspect of her work is also a cornerstone of today's philosophy of emotion. Indeed, it has been widely argued that affective states do not present their object as being neutral but as embodying an evaluative property. For instance, in fear, the feared target is presented as dangerous, in disgust as disgusting, and so on. Though the particular form of this connection is a matter of dispute among contemporary philosophers (e.g., Massin 2023), the idea that emotions are connected with values is widely accepted.

Yet, Stein not only acknowledges a link between affective states and values; she also offers a nuanced picture of how different types of affective states relate to different types of values. In particular, while general feelings (e.g., tiredness) and moods (e.g., cheerfulness) are able to tincture all the mental states of a person and in so doing present the world under a certain evaluative light, emotions (e.g., joy) are directed toward epistemic, moral, and aesthetic values, and sentiments (e.g., love) to personal values.

It is by virtue of this connection between affective states and values that, according to Stein, the other is presented in this kind of empathy as a "spiritual being." In empathizing with the other's affective states, we are able to discover the other's world of values:

> Similarly, in every literal act of empathy, i.e., in every comprehension of an act of feeling, we have already penetrated into the realm of the spirit. For, as physical nature is constituted in perceptual acts, so a new object realm is constituted in feeling. This is the world of values (Stein 1989, 92)

As a result, in empathy, we apprehend not only the other's affective state but also how the world is evaluatively presented to her. In this respect, emotional empathy makes us accessible the other's world of values, and this is a dimension of the human being which was not accessible by means of sensual empathy limited to the other's lived body. Emotional empathy can be based on sensual empathy so that here we are dealing with different levels of the empathic experience. Though we can be reluctant to characterize the other with whom we empathize as a spiritual being and to speak of entering into the realm of the sprit, Stein's idea that it is by virtue of a link between affective states and values that we come to know how the world is presented to the other as having particular evaluative properties remains valid in current research.

For emotional empathy, it is my view that perspective-taking plays a crucial role. This is the case for Stein, too, given that she understands empathy as a process. For her, it can be the case that we vaguely perceive an affective state in the other's expressions, and that in order to make this apprehension of the other's experience, perspective-taking is necessary. For instance, we can see that the other is suffering. This might give us an initial but vague grasp that for this person the world is presented under a negative light. Yet, if we are able to adopt the other's perspective and imagine how it is for the other to be in her particular situation, this might offer us a more nuanced view of what the other is going through. For Stein, what I call here an imagining enables the empathizer to really grasp how the world looks for the other. We might then realize that the other is suffering because she is anxious about her future and therefore that the world appears to her as a menacing and dangerous place. In so doing, we can come to grasp the evaluative dimension of the other's experience in more detail. Yet, the role of perspective-taking for emotional empathy remains central, even for the pure simulationist, which does not require a stage of perception in order to have an empathic experience. Indeed, for the pure simulationist, it is by means of perspective-taking that we come to imagine the evaluative properties with which the world is presented to the other.

To sum up, and to adopt more contemporary terms, the distinction between sensual and emotional empathy concerns the *object* of empathy. In sensual empathy, the object is the lived body as a field of sensations and placed at a zero point of orientation. In emotional empathy, the object is the other as a spiritual being with its affective states and the corresponding world of values. In my view, at both levels of empathy, perspective-taking performs a crucial role, since otherwise the apprehension of the other's experience would likely remain rather vague. Moreover, both levels of empathy remain in a particular and functional order. Sensual empathy might serve as a basis for emotional empathy (Svenaeus 2018). Importantly for my account is that what we call perspective-taking can in fact take place at two different levels: there is a perspective-taking at the sensory level and a perspective-taking at the emotional level. In each of these levels, perspective-taking presupposes perspective-building, projection, and resonance.

Stein's distinction has been reintroduced into current research by Svenaeus to explore empathy in the medical context. My aim in this chapter is to show that this distinction can also be useful in understanding empathy in virtual contexts. In fact, with the exception of Svenaeus's work, the distinction is absent from current research in which the idea of sensual empathy has been scarcely examined. In addition, the phenomenological distinction between levels of empathy fills a lacuna in contemporary research insofar as the differences it captures cannot be explained in terms of other distinctions that are in current usage. On the one hand, the distinction

should not be conflated with the distinction between cognitive and affective empathy (see Maibom 2017b, 1). The term cognitive empathy refers to mere perspective-shifting or mindreading, while the term affective empathy presupposes that the empathizer comes to feel something similar to what the other is going through. In contrast, the terms sensual and emotional empathy refer to two different objects of the empathic experience. On the other hand, the distinction between sensual and emotional empathy should not be conflated with the distinction between low-level and enactive (or high-level) empathy. Low-level empathy is an automatic response to the other's bodily expression, while enactive (or high-level) empathy entails imagination-like states and perspective-shifting. Yet, as explained above, sensual empathy entails perspective-shifting and as such imagining.

10.6 From Immersive Body Swapping to Apprehending the Other's Emotions in EVR

Having argued that the phenomenological distinction between two levels of empathy entails distinguishing between two different forms of perspective-taking, let's go back to the initial question of this chapter regarding the role of perspective-taking to explain how EVR might help to foster empathy. My claim is that EVR enables sensual empathy but not necessarily emotional empathy. Yet, given that emotional empathy is often based on sensual empathy, when complemented with other tools, EVR can be used to promote emotional empathy as well.

As we have seen in section 10.4, in EVR, perspective-taking is limited to a particular or a set of particular perceptual experiences of an avatar. By means of different devices, the user comes to perceive a particular aspect of the other's reality. These perceptions generate in the empathizer a series of perceptual illusions of presence, embodiment, and agency. This enables her to adopt the other's perspective "from the inside" in a very precise and realistic way. These sensations can generate the impression in the user that there is a real body swap with the avatar.

However, other mental states of the avatar, such as her emotions, thoughts, beliefs, memories, etc., are not made available for these different technical devices. In fact, the scope of the other's experiences made available to the user is limited to the perceptual experiences transmitted, thanks to the oculus rift, headphones, etc. Therefore, non-perceptual states need to be presented to the user by other means. For this to occur, the user has to imagine the elements of the other's experience which are not accessible via the aforementioned techniques. Once imagined, the user can then adopt the other's perspective "from the inside" and imaginatively recreate what the other is going through. The empathizer can do so in a self- and in

an other-oriented perspective-taking. For the latter to be the case and for empathy to be possible, the empathizer has to gather as much information as possible about the other. However, unlike what occurs with the perceptual experiences made immediately available to the user, she does not have the impression of really undergoing these non-perceptual experiences.

According to these results, perspective-taking in EVR makes available to the user the avatar's perceptions in an immediate and accurate way. EVR generates the impression of a body swap enabling the empathizer to put herself in the other's shoes. Yet, perspective-taking is limited to those of the avatar's perceptions transmitted by different technical devices. By contrast, non-perceptual mental states cannot be made available by the technical devices used in EVR. The user has to imagine in order to build the avatar's perspective, project herself into it, and resonate with the other's experience. How to explain the role of perspective-taking for empathy in EVR given these results?

To begin with, according to the description of perspective-shifting in EVR elaborated above, the techniques employed foster sensual but not necessarily emotional empathy. There are different arguments in favor of this claim. First, as we have seen, EVR enables its users to adopt the perceptual experiences of another being and, in so doing, it generates perceptual illusions of presence, embodiment, and agency, in which the user has the impression of perceiving the world from the other's perspective. Drawing on the phenomenological tradition, I characterized sensual empathy as empathy with the sensual experiences of another being. I underscored that this involves adopting the other's sensations, her point of orientation in the world, and her will. Clearly, the kind of perspective-taking that takes place in EVR fits into the model of sensual empathy.

Second, focusing on the second illusion, authors such as Maselli and Slater (2013) describe the illusion of body ownership in terms of healthy subjects experiencing the other's body as if it were "their own physical body," and they argue that this illusion is particularly interesting for the study of self-consciousness as it relies on an altered representation of the entire body. We can interpret this illusion in phenomenological terms and claim that the illusion does not concern the "physical body" but what I called above the "lived body," i.e., the consciousness of one's own body and its surroundings. In my view, this consciousness would affect those perceptions made available to the user as well as the sense of agency. Indeed, the empathizer has the impression of feeling into the other's lived body and perceiving aspects of reality as the other does.

This speaks in support of the claim that perspective-taking in EVR might lead to sensual empathy. However, while in phenomenology sensual empathy occurs via a direct perception of the other's lived body, in EVR it takes place by experiencing ourselves the other's perceptions. In other

words, in EVR, the user has the illusion of experiencing herself the other's lived body. By contrast, the kind of perspective-taking enabled by EVR does not make the other's emotions, and thereby her values, directly accessible. In EVR, non-perceptual aspects of the other's mind remain hidden to the user. Thus, to access the other's emotions, the empathizer has to resort to imaginings of different kinds. In brief, the kind of empathy enabled by EVR consists in swapping bodies rather than minds.

That said, emotional empathy can be fostered in EVR on the basis of sensual empathy. For instance, after having an experience of body swap with the other, a user can come to imagine how it is for the other to experience a certain situation. Yet, for this to occur, strategies other than the techniques mentioned above should be involved. Here, for instance, narrative devices, such as stories or short narrations about what the other is going through, play an important role. Otherwise, the other's emotional life remains unavailable to the user. Thus, for EVR to foster emotional and not merely sensual empathy, it has to be supplemented with the usage of narratives.

In my view, "The Machine To Be Another" (TMBA) is a good example of how perspective-taking in EVR can be employed to foster sensual as well as emotional empathy. TMBA is an example of artistic work outside the laboratory which combines different techniques and which, in my view, has the potential to foster empathy at the two levels mentioned above. The machine has been used in a different context to reduce negative stereotyping. The use of an oculus rift and headphones enables a body swap and can present real narratives from individuals acting as performers. The machine has been described as an "Embodied system" because there is no virtual world or 3D model but rather a body swap (Sutherland 2016). The machine consists of an EVR System that facilitates body transfer.[15] TMBA also resorts to the use of narratives to make empathy possible. Combining VR with performance art, the machine enables us to perceive ourselves in a different body, fostering active perspective-taking and empathic concern. The use of technical devices and narratives means, in my view, that the machine is capable of promoting forms of perspective-taking which might lead to sensual and emotional empathy.

To sum up, when contemporary researchers claim that EVR can be used to train empathy, in fact, they should be aware that the kind of empathy at work here is sensual but not emotional. Indeed, EVR facilitates body swap and, in so doing, it enables sensual empathy, but EVR alone cannot foster emotional empathy. Yet, since sensual empathy can be the basis for emotional empathy, EVR can potentially play a role in fostering emotional empathy as well. However, for this to occur, EVR must be supplemented with narratives.

10.7 Concluding Remarks

This chapter has examined the role of perspective-taking for empathy in EVR. My aim has been to show how the contemporary debate among natural scientists can benefit from the phenomenological distinction between levels of empathy. After elaborating an account of perspective-shifting in non-virtual as well as in virtual environments, I introduced the phenomenological distinction between sensual and emotional empathy. I argued that this distinction enables us to differentiate between two different forms of perspective-taking. I argued that EVR can be used to train sensual empathy, but that for fostering emotional empathy it is necessary to introduce narrative devices, which make the other's emotions and values accessible to the user. These results offer a contra-argument to those who are skeptical of the link between EVR and empathy. Indeed, as we have seen, for Sora Domenjó (2022), VR does not increase our understanding of the other's feelings. Yet, while supporting this view, this chapter has argued that there is a link between EVR and sensual empathy, and that, on the basis of sensual empathy and with the help of narratives, emotional empathy could be engendered. More generally, these results show that to understand the link between EVR and empathy, the introduction of phenomenological concepts can help to achieve a nuanced view on how perspective-taking, a core element of complex forms of empathy, works in EVR.

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Notes

1 There are different forms of Virtual Reality (VR) (see Bertrand et al. 2018). In non-immersive VR, tridimensional environments created by computer-generated imagery use two-dimensional visual interfaces, such as computer screens and projectors. In immersive VR, tridimensional environments use immersive interfaces, such as VR glasses, and immersive projections, such as a CAVE system. As observed by Bertrand et al. (2018), some of these technologies are more immersive than others.
2 Other issues to be analyzed (some of them already mentioned by Sora-Domenjó) are how empathy promotes pro-social behavior and whether its effects are short- or long-term.
3 For a discussion, see: Feagin (1996); Gibson (2016); Stueber (2016).
4 For an exception: Walton (2015). For him, empathy does not require perspective-taking.

5 In this respect, she claims that the first and the third stages resemble perception, while the second stage, which involves perspective-taking, in my view is based on imagining.
6 I employ the term "re-presenting" as used by phenomenologists to refer to imaginings in which the object is presented in image and not in person. It translates the German term "Vergegenwärtigung." See: Cavallaro (2017).
7 Differences in the scope can be reflected, too, at the phenomenal level. See: Werner (2023).
8 For the view that imagining from the inside involves perspective-taking, see: Williams (1973).
9 This idea that imagining-experiencing generates experience-like states can be found in: Arcangeli (2020). Note that I adopt a quite liberal view here according to which we are able to generate imaginative counterparts to all our mental states and the character's ways of engaging with the world.
10 It is a matter of controversy if this recreated state is an actual or an imagined state.
11 Here, some authors argue that for this we have to experience the same (Coplan 2011; Feagin 1996), while for others, it suffices that we experience something similar (Stueber 2006).
12 The interrelation of presence and empathy has been analyzed by Schutte and Stilinović (2017).
13 Lenggenhager et al. (2007) designed an experiment using conflicting visual-somatosensory input in virtual reality in order to disrupt the spatial unity between the self and the body. They found that during a multisensory conflict, individuals feel as if the virtual body seen in front of them is, in fact, their own body. This leads them to mislocalize themselves toward the virtual body, i.e., outside their own bodily borders. These authors work with the idea of a bodily self-consciousness in terms of a non-conceptual and pre-reflective processing and representation of body-related information. In cases of multisensory conflict, they found that vision dominates over proprioception and touch.
14 In current research, sensual empathy has not been a focus of concern either in the phenomenological or in the analytical tradition (see: Maibom 2017a; Englander and Ferrarello 2023). Even in Stein's research, there has been a focus on emotional empathy rather than sensual empathy (Vendrell Ferran 2015; Magrì 2018).
15 For a critique of TMBA, see: Sutherland (2016).

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