

The performative role of the body in gamified vision and VR

Luca Cardone*

Abstract

Starting from Flusser's intuitions on the role of buttons and how they have modified our images, the article aims to investigate the relationship between the new technologies of the audiovisual world and the body. Using the phenomenon of gamification as a solution to understanding the complex landscape of hybrid media, the categories of interaction and immersion will be examined. The objective of the research is the analysis of the performative interactions of the body immersed in the virtual reality of videogames and software cinema. The phenomenological crisis of the body inaugurated by virtual technologies produces the need to rethink its performative possibilities in an amplified way within the virtual immersion. The scattered body in the image -and not vanished-, within the analyzed virtual contexts, appears as an element of the narrative itself. The consequences of this performance increase are examined here, such as the author's disappearance in a strong sense and the weakening of the state of aesthetic contemplation, both results of the gamification of technical images. The article takes advantage of the valuable interview with virtual designer Enea Le Fons for his unique and extended experience in a VR session.

Keywords: VR, gamification, body, performance, buttons.

From abstraction to computation: the Button

Nowadays, it would be impossible to talk about media without mentioning the preponderant drive towards tentacular transmediality that hybridizations are achieving. Keywords such as *cinema*, *videogames* and *virtual reality* have become hemorrhagic, unable to demonstrate their semantic and formal boundaries. Therefore, it is only by being aware of using an eye still tied to the past that it is possible to analyze the first step that has led us to the tangle of images we all have to deal with every day. This decisive theoretical step – with the license of not having to go back to Benjamin to stay in the second half of the twentieth century – was proposed by Vilém Flusser. According to the Czech author, the history of our technical images arose when we began to compute rather than abstract. New technologies allowed us to move from the vision of objects to the computation of concepts. Unlike traditional images, technical images “arise in an attempt to consolidate particles around us and in our consciousness on surfaces to block up the intervals between them in an attempt to make elements such as photons or electrons, on one hand, and bits of information, on the other hand, into images”

(Flusser 2011, 16). Computing is the work of the envisioners, or what we now call programmers, who synthesize the point elements (pixels) to create images and information programs, struggling with the entropic and dis-informative universe. It is the work tool of the programmers, analyzed by Flusser in an peculiar way, to make the author's thought useful and original in this context: *the button*. The Envisioners “press buttons to inform, in the strictest sense of that word, namely, to make something improbable out of possibilities. They press buttons to seduce the automatic apparatus into making something that is improbable within its program” (Flusser 2011, 37). For Flusser, key pressing is what has freed us from the environment and from imaginative contemplation.

Computed images and buttons represent our daily routine – despite the fact that the buttons have transformed deeply in recent years – and they are what reflect and make physical the place of boundary and hybridization that stands between human operator and his technologies. Key pressing is also the essential action that makes it possible to dive into the medial complexity of these past twenty years. We began to play with every type of image by inserting ourselves into a dense network of exchange in

which there is no beginning and end, but everything is constantly in transit. From a lexical point of view, too, we are stunned by the sudden linguistic changes that accompany the medial experiences. More and more often, the terms “cinema” and “videogames” are associated by using a “picklock” term (Catolfi and Giordano 2015, 10), which might be able to open the doors of this complexity: *gamification*.

It is not an easy term to decipher, especially because of its vast field of use. It is a phenomenon that cannot be mapped or historicized (Giordano 2015, 81), and we can agree with Arcagni that “it is the keyword of a series of technological discoveries and narrative strategies able to make the user feel involved, in the center, participant. Within a non-linear narrative structure where his contribution also affects the construction of the story” (Arcagni 2016, 20). In the audiovisual world, the term “gamification” is what puts in crisis the split between user and spectator, creating a hybrid. It is the word that can act as a magnifying glass to observe and understand what is happening today to what we meant with “spectator”, in their daily interactions with films that are no longer just movies and video games that are no longer mere entertainment.

An interesting genealogical work on the history of cinema and videogames, carried out by Skalski, Neuendorf, Lieberman and Denny (Skalski et al. 2008), brings the point of intersection between these two media back in time, showing how they have been coherently in contact since the origins of the videogame. From an aesthetic point of view, with the use of the background in cinematic terms by videogame programmers and by means of a rooting of both in common language, one can say that cinema and videogames have interwined genealogies: “film and video game technologies have followed very similar paths in their maturation and ascendance as popular media forms, revolutionizing art and entertainment in the process. One brought moving images of real and fictional worlds to the masses, while the other allowed viewers to interact with those worlds, transforming them into players” (Skalski et al. 2008, pp. 3-4) and in both media forms the coveted result has always been the perceptual illusion of non-mediation (Lombard and Ditton 1997). Leaving aside the chronological issues, it is today that we notice the gamifying factor with incredible preponderance. Just think of

Bandersnatch (2018), an episode of the TV series *Black Mirror*, in which the viewer-user must choose interactively how to proceed in the labyrinthine plot. An interesting case of hybrid product is the concert of Travis Scott (April 24, 2020), virtually released on the platform of the online video game *Fortnite*. The spectators-gamers, in an experience halfway between the video game and the participation in a real concert, have had the opportunity to move around a virtual gigantography of the trapper – unable to kill other users of the community to ensure a proper fruition of the event – who sang and danced his most famous songs in a continuous variation of environments, worlds and atmospheres. The example of the video game *Death Stranding* (2019) confirms the incredible mix of video games and movies. Made by Hideo Kojima, the video game was produced by means of motion capture, inserting real physicality and faces of famous actors within the virtual context, to enrich the gameplay and make it tend as much as possible to a cinematic narrative. It is about playing and having the feeling of watching something that has been actually filmed. And yet, what happens in this film is determined not by any director, but by a player.

The aesthetic experiences that these products offer, although different, all have an element in common: the button. Whether it is a selection at a crossroads of plot in a film by means of interfaces, an event created within a video game or a game as close as possible to the cinematic narrative, the focus falls on the action of the user, which most of the times is realized by means of a gesture, a physical act on a joystick, a mouse or other types of controllers. There is an infinite number of examples that we could bring back within the context of what is called post-cinema, that is, the current (but ever evolving) situation of the entire video games’ universe. Certainly, distinctions are still possible, allowing us to talk about cinema and video games separately. It is Arcagni, again, to point out the fact that when we talk about the visual space of the video game we detect that it “requires a presence within itself, and not only as a psychological and affective projection, but constituting itself as a real sensitive environment, to be lived through haptic relationships” (Arcagni 2018, 109).

Zecca indicates two different types by means of which cinema faces the process of gamification: 1) the adaptation of gaming content

and 2) the creation of new interactive forms. If the first strategy does not need explanations, the second opens up a wide range of possibilities. In this direction, the film “can articulate a sort of methodical hybridization with the playful language, incorporating within it structural elements of the game (its method or part of it, in fact), with reflections produced on its narrative and experiential design” (Zecca 2015, 110). This ludicization mode superimposes on the film some mechanics of the game dynamics, especially at the narrative level and, as we have just discussed, at the level of spatial interaction. There has been much discussion about the narrative category in the video game. For Bittanti, “the video game is not a narrative medium, or rather, it is post-fiction: the user of a playful text plays the role of reader and writer at the same time [...]. Video games are not stories: they are rather spaces to be wandered, explored, built and destroyed” (Bittanti 2008, 8). I believe that the term post-narrative can only be used as long as it is not too rigid. In fact, in recent years, the narrative of video games has increased significantly. Let’s take the example of the video game *Journey* (2012), in which the player can only walk in a vast desert towards a bright mountain, collecting objects that can improve his jumps and flights. The video game, reducing the number of playful elements, increases the level of narration (although minimal), giving the user the opportunity to “play” a spiritual journey, solitary and silent. As much as we must relate the narrative to the broad and diverse context of the post-cinematic era, we must also be careful not to conceal its traces, nor to barter it for interaction. To keep the category of narration solid, within the audiovisual context, is absolutely fundamental, in anticipation of what we will shortly say about the body. In principle, we can say that “the ludic turn at this particular moment [...] offers a reconstituted sense of presence and action – and possible source of empowerment – in the appropriation of, and nurturing of play” (Flanagan 2014, 267-268). We must then begin to think of the push offered by gamification within the gaming context as a condition of possibility, as an openness to the possible.

Interaction and Immersivity

The profits of the video game, after the path we have highlighted so far, are two: interaction and immersivity. What I want to demonstrate is

that in both cases, the subject both these characteristics of experience address is *the body*. The increase in the degree of interaction, a condition of possibility created by the keys analyzed by Flusser, pushed the figure of the artist to delegate his work to the viewer, making him a user-creator. Today, it is the user the one who activates the artistic practices of the hybrid products described above, and he can do so precisely because his body is called to respond by means of buttons, controllers and mouse. Just think of the possibility offered by streaming platforms to program their own schedule and to be able to deliberately choose what to watch: the first shot against the cinema in theater. In addition to being means of computation, the buttons also turn into prosthetics of the human in all those interactive forms at the base of which the algorithm and the software lie. This happens not only with videogames, but also with what has been called software-cinema (Arcagni 2016, 47), in which the degree of interaction between user and narration increases dramatically. But the vertigo, we must say, is in this case embodied. The body itself is a narrative and performative element, in fact, a prosthesis of the narrative within the audiovisual product. The category of interaction alone doesn’t do it justice. Therefore, we need to consider the phenomenon of virtual immersivity.

As an author, Flusser was able to theorize the near future. As we already mentioned, he indicated a useful watershed for those dealing with the study of technical images. And yet, he has never had a chance to live a simulation in VR, nor has he ever seen an augmented reality device. Because of these technologies, today we can no longer speak only of buttons, but we must take into account, as well as the tactile element, the view and its reorganization within the media experience allowed by new technologies. Today, playing in VR means to do without a screen, since the screen is all around the user by means of the headset. In the same way, it is possible to enter a film (or parts of it) with a viewer, having the sensation of being able to take part in the plot, to touch the set design and contribute to the script. It is not a rare experience to find on your Facebook wall some very immersive trailers, meant to promote outgoing movies (especially horror) in which you have the opportunity to enter the narrative, observe environments at 360° and look around for the point where a scary being appears for the jump scare. The total cinema, or the cinema with the greatest

participation, seems to be the final direction of the audiovisual in the post-cinematic era. Virtual reality is the medium through which this dream is being realized. We must think of a future of cinema where the viewer is a biotechnological actor, completely hybridized and grafted into the gaming context, and the technique of motion capture would only be the first stage of this dream (Amendola et al. 2017, 10).

But what about the body, in this vertical technological flow? We need to break down the common idea that an increase in virtualization will *de facto* lead to a disappearance of the body, and start talking about a re-organization of it instead. James Cameron's film, *Avatar* (2009), is an interesting crossroads to move in this direction. The kind of relationship Jake Sully has with his avatar is what leads Eugeni to talk about *naturalizing the technological experience*. The *Avatar* structure evokes the correct 'epos of the post-medial condition we tend to have' (Eugeni 2015, 36). This naturalization refers to the thought that we should not see new technologies and new medial devices as alterity, nor as the opposite of the body (Belting 2009), but as prosthetic internalizations restructuring the human body and its way of moving in the surrounding environment. The mechanism underlying this vision is precisely the lack of a hierarchical vision in favor of a horizontal conjunction. The result is a reabsorption of what we mean as technological prosthesis in a human subject that is fluid and open to modification, a "unit of the human living and its inorganic prostheses that does not stop to reconstitute, of a singular compound that does not stop to recompose" (Montani 2017, 42). With this epistemic frame in the background, what happens to the body in a VR or XR experience embedded in a film? And what happens to the grammar of the image? We must firstly say what the cinematographic image was until a couple of decades ago. Cinema has often been re-read through the symbolic category of the mirror, or otherwise as a matrix of recognition of the subject coming from the outside: cinema is a "device able to reproduce and reactivate the processes of building the self: the images that pass on the screen in fact when they capture the viewer assign a specific point of view- that of a dreamer subject foreign to the fictional world but of which all the unfolding of the vision depends at all times. [...] The spectator discovers himself in the illusion of a certain position. [...] It is a subject constituted from the outside" (Eugeni 2015, 62).

All this seems to be echoing in the words of one of the greatest interpreters of cinema from the twentieth century, Andrej Tarkovskij, when he writes: "Whoever wishes should look at themselves in my films as in a mirror, and they will see themselves" (Tarkovskij 2015, 171). The cinematic image could therefore be understood as an exteriority that bases the subject from the outside, and screens as almost-subjects suggesting "the unsettling promise to make us live within them [...] without however going so far as to maintain it, without getting to confuse the two poles – seeing and visible – of that reversibility that, realizing itself fully, would end up preventing the vision itself" (Carbone 2016, 29). But all that technological innovation is offering seems to be a total realization of the invitation that the cinematographic image poses to us. No longer just the desire to sink into the image, but the concrete possibility of doing so. These are the virtual realities that "promise the viewer a total and plurisensory immersion in a three-dimensional environment, thus realizing, perhaps in an excessive way, that rupture of the picture, that dissolution of the frame" (Caronia 1966, 67).

However, what I maintain here is that the interactivity is not a result of the exclusion of the body, but an achievement through it. The body is neither the negative of the virtual, nor the bulwark of the reality's resistance: "The body does not disappear at all, and what especially does not disappear is its function as a symbolic field of interaction processes", and it is again Caronia to argue that "the processes of replication of the body and invasion of the body, the virtual technologies begin to flank a third process, that of dissemination of the body in the networks and in the virtual spaces, immaterial, of the digital machines" (Caronia 1996, 65). This third state of interaction and transformation of the body in contact with medial immersivity is the most interesting. The body is scattered in the virtual space and is superimposed on the individual structural parts of this space, namely pixels, interfaces and algorithms. It becomes an integral part of it as well as an activator.

The performative role of the body in VR and XR sessions

In order to understand some stratified dynamics under the surfaces of phenomena, it is often useful taking to extremes the phenomenon itself, bringing it to its extreme possibilities and

freeing all the senses. For this reason, I interviewed Enea Le Fons, a virtual architect who in 2018 was the protagonist of an unprecedented experiment. The virtual designer has lived for thirty consecutive days in VR, creating environments and structures. The experience of Le Fons is an opportunity to discover the role of bodies in a virtual session that gets prolonged for so long. I am reporting the full interview below:

What about the physical bodies in a virtual reality session?

“In virtual immersion with six degrees of freedom, the physical body is the main instrument of interaction: both hands are used to manipulate objects, the head to direct the gaze, the legs to move in space. It therefore plays a central role, especially when compared to sedentary interaction with two-dimensional screens and interfaces.”

What are the ways in which the body re-emerges during the virtual session?

“Definitely immediately, in the collision of the body with objects that are present in physical space, but not present in virtual space. Just to reduce this phenomenon, I reconstructed much of the physical space around me in 3D, transforming VR immersion into an XR (cross-reality/extended reality) experience. At first, to move without hitting objects, I had to rely on a mix of spatial memory and an awareness of the volumes around me, not unlike a blind person. Then, through the 1:1 3D reconstruction of the room and the tracking of tables, seats and piano, I was able to interact more smoothly and immediately with surfaces and objects present in the physical world. After the first fifty hours of diving, I started to feel an impact on the sight: having accustomed the eye to hold a fixed focal length about 3 fingers away, by removing the viewer I started to feel the need to exhume exercises to realign the focal length, to reclaim the normal ability of the eye to focus at different distances.”

What were the individual moments in which you remembered your body? Were they related to tiredness and pain?

“Surely, being locked in a study for twenty-eight days of pre-production plus thirty days of immersion required a certain psychophysical commitment. The circadian rhythm was the first thing I had to overcome: at the beginning of the experiment, my body was looking for a day and a night. I immediately noticed that simulating the night in virtual reality did not necessarily help to

reconcile sleep, and thus I opted for a polyphasic approach to sleep. Around the fifteenth day of the dive, the eyelid area around my left eye began to swell, I resolved through a better cleaning of the visor lenses (with rosemary water and essential oil) and through a cloth with warm water and essential oils for the eyes. Working in an immersive way in code visualization and creating abstract spaces, for most of the time I even removed the 3D reconstruction of the room: this type of immersion can have some dissociative effect on the body, so, in order to maintain a good instinctive relationship with the body, I started to integrate a hatha yoga routine.”

Would you say the technical equipment you used required a performativity of your body?

“Definitely: having carried out the program in 2018, I had instruments that, although sophisticated, still represent a first iteration of virtual reality viewers: essentially it is LCD screens suspended 3 fingers before the eyes, with monofocal lenses, at that time not equipped with see-through. Screens and viewer circuits emit some heat, the viewer weighs about 800 grams, and with those technologies a prolonged immersion is definitely not a physically pleasant experience. The key is to develop the ability to transform physical discomfort into a transcendent experience, and respond to it with adaptability and technical and procedural ingenuity.”

Is the physical movement on the controller the condition of the possibility of a virtual action?

“Yes, the physical body is still the essential interface for interacting with the tools that allow virtual immersion. Essentially, I lived through three phases: at first, I tried to recreate my body in virtual reality. It was useful but also alienating, because the virtual body did not correspond entirely to the physical body. So, I started experimenting with reducing the avatar to an aggregate of tools and objects, and then used it as a data and functions carrier. This way, the body acquired a new level of utility. In the third phase, a need for space and absence of limits emerged: I removed the body and made the hands semi-transparent, binding only to them any objects and functions. This gave me a greater freedom of abstraction and integration with the creation of meta-spaces, with virtual architectures built from data, characters, code, platonic solids, experiments on spherical architectures, architecture for sea-steading and interplanetary life.”

There is a certain prejudice, in common thinking, that the body is the great outcast of augmented and virtual reality. This is also a result of film narratives. Would you say the physical body resurfaces from the virtual session with amplified – rather than reduced – performative potentialities?

“Absolutely. The need to accustom body and mind to moments of blindness induced by the viewer and by the slowdowns of software and hardware glitches requires the development of a different ability to perceive space, objects and people. The result seems to be a better ability to maintain the correct perception, functionality and workability of the body through the alternation of different perceptual states.”

Are the performative possibilities of the body amplified thanks to the virtual or, on the contrary, is there really a regression motion?

“I am sure it depends on the use one makes of virtual reality and other amplification’s instruments. A use for creative purposes, research and development, combined with common sense and exploratory enthusiasm of the presupposed body’s limits, perception and abstraction, will automatically lead to an amplification of the perceptive and functional user’s abilities. An excessively recreational use of the platform, on the other hand, can lead to an excessive extraction of the person from the body’s awareness and from the capacity of abstraction, as well as softening creativity, thus leading to a regression of the human potential. These tools are an extraordinary opportunity to amplify human potential and, if used in a conscious and creative way, can bring incredible benefits. However, if used unconsciously, in a sedentary and consumerist way, they can lead to maximum dystopia: the extraction of the individual from himself and the recreational of his ego in a virtual world, full of needs and bombarded by continuous stimuli.”

In recent years, the hybridization of media has complicated the use of the terms video game, cinema, network, virtual. Particularly interesting are the cases of films and videos where it is possible to enter the spaces and interact from the inside in the narration. It could therefore be said that the sum between the performance of the body and the characteristics of the virtual scenario itself have created a new dimension of the narration, in the games as well as in the movies. Do you think it’s possible that the body’s own performance during virtual sessions fuses a new grammar of the image?

“I absolutely agree. It resembles the grammar of the video game image subjectively, but the presence of head rotation and body placement add and suggest new elements. The mere introduction of the head as a camera point and the constant close-up dictated by the immersion determine a totally different projected image. The virtual-reality viewer is actually the camera point controlled in real time by the one who makes the experience, and this adds a new quality to the image: just look at the recordings of a virtual reality session to see the presence of the subject making the experience. What is immediately noticeable is the revealing of the user through what attracts his attention, as well as his personality through movement. The user becomes an actor, and is heard from the images that are created. I find it interesting that you enter the realm of image co-generation, where the experimenter becomes co-generator of the image itself.”

Le Fons agrees that the possibility of entering the virtual filmic space and being able to select the portion of space to be observed (framing) means that the rigid labels of medium shot, American or long shot etc. weaken. The user will decide whether to focus the main action with his view or to get lost in a detail of the set or a secondary character. This leads to the complex relationship between the user’s body and the elements of the grammar of the image. The narrative elements of the virtual image become prosthetics of the body, able to increase its performativity, instead of making it regress to the point of evanescence. The body is restructured in the virtual space through the tools made available by the film (or virtual game) and its grammar of the image. But at the same time, it is the body that bases this grammar, in its continuous possibility of choice and interaction. The scattered body is therefore translatable in this way: it is what triggers narrative elements and framing through physical gestures, such as looking and pressing buttons, and in return is activated and increased in its performative power by becoming a bodily prosthesis of the image: it is a narrative element. The complexity of this definition is dictated by the fact that we are trying to observe a phenomenon in which body and software co-constitute each other at the same time. The body restructures itself performatively through the image, providing it activates its contents. Thus, the narrative forms of the diegesis become the prosthesis of a completely scattered (and not disappeared) body, and

therefore a more performative one. This is the full realization of what we mean *by naturalization of the technological experience*, if we relate it to the VR and XR sessions.

Certainly, we are amplifying the idea of a body produced in the increased gap between the experience and the biological. And this direction is always the victim of prejudice, so the immediate experience is more authentic than the mediated one: the idea of total abstraction of the body is viewed with suspicion (Wolfendale 2020). We can say that the body is able to perceive as its own a non-biological element even before VR, as in the cases of prosthetics and phantom limbs. But we are still far from the concrete demise of the embodiment theory. For the moment, we cannot exclude the buttons – and their consequent physical interactions – as Le Fons claims, because we are still at an intersection stage. But in 2020, two years after his experiment, a small community of about a thousand developers is working on integrating BCI (brain computer interaction) data, iris positioning data, the galvanic response and recognition of facial expressions within immersive experiences. The integration of this technology into virtual viewers is the next leap, in the grammar of the image, to be made possible by this cybernetic extension. This will revolutionize the very essence of game design, storytelling and interface design. Today, through the experience of Le Fons, we can still see a certain inability of the virtual reality headset to give life to an embodied transparency, but we must think of it more as a ‘technical limit in transit rather than metaphysical’ (Parisi 2019, 162). What we said about VR cinema also applies to video games. The role of the character (avatar) is not to represent the player, but rather to outline the set of possible actions within the game world. The avatar is not the intermediary of the player in the virtual world with the function of representing the player in an environment. From the encounter between player and avatar “someone or something else is born, that is not constrained by any of those two agents; a third being, a hybrid” (Baum and Maraschin 2014, 18). The thinning of the space that divides the player from his character in VR and XR experiences does not involve the subtraction of the body, but an increase in performance, implemented through technological devices (controllers). Pietro Montani focused on the possible relationships between human body and the new devices. The

paradigm that best reads the current situation is what the author defines *empowerment*, in which the body is thought in its constitutive exposure to technical prolongation. Montani distinguishes two versions of this paradigm: one moderate and one radical. If in the moderate version the body is still thought of in a dualistic constitution, in the radical form the technical empowerment “will rather be understood as the actual implementation of an entirely new performance unit: an emergency that is discovered in the world to the extent that it acts [...] and that must learn to govern itself through an exercise and assumption of responsibilities that can also be very long and involve failures and regressions” (Montani, 2017, 48). In the radical version, the body does not discover the prosthesis, but it turns out to be prosthetic, and only in the performative act of its new activities. Even more interestingly, this act is constantly affected by the possibility of error. In relation to this, I think it is particularly significant that in the 2018 experiment, Le Fons successfully completed 30 days in VR immersion while his predecessors failed in China after just a few days. Le Fons preferred to create and give space to imagination in his sessions, while his predecessors intended to tackle the thirty days in game sessions in war contexts. This brings us to an essential point of Montani’s thesis: we need a space of man’s disautomatization in which the imagination and creativity reign, and in part this echoes in the words of Le Fons himself that the virtual will be a real possibility provided you use it creatively and not strictly playful. Negativizing the excess of ludicity does not mean denying the development of videogames, nor discrediting the process of gamification, which, as has been said, can be seen as a condition of possibility and openness, but rather to rethink the directions. Including video games in museums and talking about the legitimization of ‘videogame art’ (Romualdo 2015) is a significant step in this direction. Software cinema, videogames and creative sessions in VR open a crisis of body phenomenology. This crisis, however, cannot end with a progressive disappearance of the body, but must be directed towards a reontologization. It is not the body that must become a surrogate, it is the virtual simulation, which Parisi defines as ecological, which must “become more corporeal, supporting the embodied transparency of the ordinary sensorimotor experience” (Parisi 2019, 163).

We must keep as a warning the words of Latour: “If the opposite of being a body is dead, there is no life to expect apart from the body” (Latour 2004, 205), but we must also understand that there awaits an “important epistemological challenge of taking material culture seriously and developing common relational ways of thinking about the complex interactions among brain, body and world” (Malafouris 2013, 230); and among these three subjects, the virtual material can no longer be excluded.

The author's disappearance

One of the consequences that the disseminated body and the becoming prosthetic of narrative elements entail is the loss of the concept of author in its strong sense. It is a phenomenon that Flusser already highlighted in the second half of the twentieth century. Information is no longer created by the individual, but by what the author calls *dialogue groups*. One of the characteristics of the computed technical images is to question the notion of work and the loss of material supports. In the telematic society, information is synthesized through intersubjective conversations: this means that every work now has the only purpose of being modified by the users they receive, to be then sent again, but as new information. As Pinotti notes, the negotiation of authorship allowed by the use of an avatar on the net can take different forms, because it can represent a multiplicity of individuals at the same time (Pinotti 2019). With the proliferation of avatars, a strict distinction between who produces what is complex and perhaps impracticable. Flusser argues, in dialogue with the texts of Benjamin and McLuhan, that the entire social and political structure that accompanied the concept of author from the Roman Empire onwards is now at sunset: “reproducibility makes superfluous the great authorities that guarantee the fidelity of the message, and they become more and more superfluous thanks to the progress of the reproduction technique” (Flusser 2011). Any authorship will disappear as redundant with respect to the structures of the dialogical groups. The image that for Flusser synthesizes in his time a future that does without an author is that of telematic music: “The essential difference between chamber music and telematics is therefore as follows: chamber music takes place in linear time, develops themes, and one

improvisation follows another. Telematics, on the other hand, occurs in a simultaneous time and space, and all players in all places make decisions relating to themes and their variations all at once. That is the difference between pressing on a piano key and on the key of the apparatus.” (Flusser 2011, 163). Telematic music is the daughter of jazz, but improvisation is no longer a moment that fills the holes of a score already established: it is entirely characterized by participation and improvisation. Flusser, against Schopenhauer, believes that we can no longer understand the world of images and that of music as distinct – and that the world of images would take precedence over that of music, the world as will, as if it were a veil –, and it is in the contemporary audiovisual of technical images that this distinction has imploded entirely. Since we started to compute, images spontaneously move toward sound and vice versa, and this exchange happens continuously under the fingertips of users. In this infinite network of exchanges, where vertical authorship has disappeared, the rules of the economic system linked to the audiovisual sector have also changed. The network and the flow diffusion method exerted a powerful pressure on the copyright concept until the appearance of the sharing economy (Lessig 2008). In the context of virtual reality, the author disappears because within the simulation all users can create, move, handle and choose what to look at. And the way these operations can be performed is still corporeal and physical. The author-monarch took leave, leaving to the body of the user and his performance the duty to complete the creation. In the context that interests us in a particular way, that is in virtual reality, the consequence of the possibility to choose with one's own sight and with the freedom of direction of the gaze (the framing) involves the fact that the director becomes the programmer who computes and arranges the image, but then he is no longer the master of his shots. In this context, the body's definition of Belting finds ample space, according to which it is “both the body that acts and the body that perceives, on which the images depend no less than their respective media” (Belting 2009, 75).

From contemplation to participation: the affordances of virtual surfaces

If the action characterizing the pure game staged by technical images is participation, a second consequence is the loss of the contemplation state of the videogaming work. This happened at the very genesis of computation, but it is interesting to observe how this phenomenon is articulated. During contemplation, a particular *modus operandi* is activated due to an alternative system, namely synchronous activation of neuronal groups. This involves a different approach, free from the utility of the stimulus and linked to the cognitive elaboration of it; a process that leads to a certain aesthetic pleasure, a pleasure that does not evoke additional stimuli to the aesthetic stimulus (Minaldi 2016) and that we can read philosophically in continuity with what Kant discussed in his third critique, elaborating his thought on *disinterested contemplation* and the experience of the *sublime*. It is not possible, here, to dwell from the neuroscientific point of view on the alleged activation of the *Default Mode Network* (Raichle et al. 2001) that would be activated during aesthetic contemplation, and not even on the perplexities that scholars like Noë have advanced on this model (Noë 2015).

Contemplation is the state attributable to art as a faithful mirror of nature, with the “task of producing an image resembling the real, which however does not obliterate or remove its own image character in the direction of a dimension of illusory, but on the contrary affirm it in the experience of a conscious *as if*” (Pinotti 2005, 209). We must ask ourselves: is the size of *as if* and the way the artistic image looks like a mirror still possible, in virtual sessions? Can we still talk about contemplation and disinterest when we analyze artistic products created in the sphere of virtual reality?

When we relate to a real object, we usually look for its ‘affordances’ (Gibson 1986). Perceiving the affordance of the object involves recovering the experience we have of it to establish an active relationship. But when we stop in front of a work of art, things change. In the famous text that inaugurates the approach of ecological vision, Gibson examines affordances and layouts, playing a fundamental role in cinema, too: “film-viewing [...] is both similar and dissimilar to natural observing” (Gibson 1986, 297). The cinematographic camera occupies a point in the

studio set or a real place, just as the head of the observer does in an environment. The camera can turn, look up or down. The camera shot is analogous to the combination of two-eyed visions, and this results in the fact that what Gibson defines as nature’s invariants recur within the cinematic vision through the medium’s own transitions: “zoom, dolly, pan, cut, fade, wipe, dissolve and split-screen shot” (Gibson 1986, 302). With this move, Gibson subtracts the cinematic fruition from the pure contemplative state, placing the viewer in a sort of quasi-presence. On the notion of presence in relation to immersive media, Lombard and Ditton summarize six different ways in which the term can articulate. The most interesting is the ‘*presence as realism*’, which in turn is divided into *social realism* and *perceptive realism* (Lombard and Ditton 1997). The increased immersivity in VR sessions benefits more from perceptual rather than social realism, because for the sake of a perceived non-targeted state of presence it is not important that perceived elements are likely, but they must seem as you would expect if they actually existed. This is especially important when we analyze the relationship between objects in XR and in reality. Trying to adapt Gibson’s intuitions to the context of VR and XR sessions, but provided we consider the breaking points and the deep differences, we say that being able to move the head and then the view, with an *oculus*, in a computed landscape, and perceiving the layout of the surfaces, leads us to think that the affordances valid for the cinematic image are the same for virtual reality. In cross reality, however, things seem to change profoundly. In the virtual sessions of Le Fons, some objects have been reproduced in XR to improve the experience from a spatial point of view and body movement. If the object in reality has certain phenomenal characteristics attributable to the natural invariants Gibson speaks of, the direct correspondence with its representation in XR can also stop at the mere coincidence of the spatial coordinates, namely the tracking. An old, non-functioning turntable can appear in the virtual experience as an actively usable DJ console to produce a composed track list directly within the session. This is precisely what Le Fons did. In this case, we must say that the affordance of the virtual object has changed considerably, when compared to the affordance of the real object, and, above all, it could change again. This obviously does not undermine the ecological

theory proposed by Gibson, but only underlines the fact that the invariants must find their own place in the virtual in a much more fluid mode. We must also note that the context in which artistic experience is lived must also be evaluated as an independent medium. The 'context naturally pushes the subject to assume a certain perceptive attitude, and this is a fundamental condition for the manifestation of the aesthetic experience' (Chatterjee and Vartanian 2003). The experience of observing a painting in a museum is certainly different from that of a virtual context.

With all these elements arranged on the workbench, it is difficult to organize a coherent constellation about what it means to be affected by aesthetic stimuli in a virtual session. What seems to emerge, however, is the fact that the notion of presence in the virtual environment, the becoming prosthetic of the body of the narrative elements of the image, the gamification process that characterizes the technical images and the fact that the body itself is called to respond performatively in the virtual environment are all elements pushing us to a new evaluation of virtual affordances, rather than to the activation of an alternative system suitable for contemplation. Being in the image means acting in the image and with the image, physically. If, with the software cinema and with videogames, we are calm when abandoning the state of contemplation, there are also situations in which the object of the virtual session is a painting or a series of pictorial works. A case is interesting, that of a project from the University of Pretoria, that has created virtual spaces where users can freely reproduce the traditional designs of the Ndebele tribe and color the patterns preset by the algorithm (Laloti et al. 2001) or the most recent exhibitions in which, equipped with a virtual headset, users could almost touch the virtual paintings of Van Gogh and Monet. In these hybrid experiences, elements of play seem to emerge clearly, such as the crossing of a path, the selection of the space to be observed and the possibility of coloring the virtual canvas. The focus of these experiences seems once again to be interaction and immersivity, rather than contemplation and disinterest. To what extent

can a scattered body in the image be considered disinterested?

Conclusion

Starting from the description that Flusser gives of the technical images and the buttons, we have observed how, in a panorama of media that by now are completely hybridized, the interactions that the user-creator has with the image always refer to a body. In recent years, video-ludic products such as movies and videogames have become maximally immersive through game dynamics that are enclosed in the term 'gamification', and the interaction that the user has in the image is a fundamental element for the purpose of the narrative itself. In the context of VR and XR experiences, immersion places the user's body within a virtual space and represents an integral part of the narrative because of its performances. The user interacts with the software-cinema, physically selects the elements to be observed and engages with the plot through commands, interfaces and buttons. Through the experience of Enea Le Fons, we can say not only that the body is the primary interface during interactions in virtual spaces, but also that it is scattered in virtual spaces, superimposed on the elements of the image. In turn, the narrative and grammatical elements of the image become prosthetics of the virtual body, just like buttons do. Interfaces and narrative elements, therefore, are the way in which the body becomes present in the image; they are selected and activated by the user through bodily performance, and through them, he constitutes himself physically as a subject in the image.

This involves a new negotiation of the author's and spectator's roles, which tends to privilege the latter, to the point of almost reaching the disappearance of the creator's figure. In addition, in VR and XR sessions, participation and interaction have taken precedence over contemplation. We have tried to demonstrate how, through the new technologies for virtual sessions, the body does not disappear, but, on the contrary, it restructures ontologically with new performative acts.

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Biographic note

Luca Cardone is student of Philosophical Sciences at University of Milan. His research is halfway between media history and a more strictly aesthetic-theoretical approach. He is particularly interested in Russian cinema in the 1900s. He took part as a speaker in philosophy festivals and international conferences like NeMLA (USA) and has published some papers in scientific journals on topics related to audiovisual and media history.