

The Body as Virtual Frame: Performativity of the Image in Immersive Environments

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Abstract

Immersive environments perceived through head-mounted displays allow us to experience a tridimensional virtual space, no longer limited by the frame boundaries which have traditionally characterized our perception of images. By virtue of its capacity to overcome the image threshold, virtual reality is often described as the most powerful tool for incorporating the perception of the other, that is as the 'ultimate empathy machine'. The idea of dissolving the image frame is also the theoretical pivot of A.G. Iñárritu's latest virtual reality work *Carne y Arena*, in which the Mexican director implemented unprecedented virtual technologies in order to tell the experience of a group of refugees trying to cross the border between Mexico and the United States. Through an analysis of Iñárritu's installation, I aim to undo the empathy and immersive rhetoric through which VR contents and devices are presented, and argue instead that VR experience is pierced by a number of discontinuities and gaps in perception, with largely neglected potentialities. By interrogating the overlapping of the limits of the image, the boundaries of the body and those that are established by geographical and biopolitical borders, I show how in virtual reality, if the frame of the image seems to disappear, then the very function of *framing* does not dissolve, but, rather, is assumed by the experienter's body and embodied gaze.

* I would like to thank two anonymous reviewers, as well as Thierry Lenain, Alice Lenay, Francesco Parisi, and Andrea Pinotti for their helpful comments and suggestions. The research presented here was funded by the Marie Curie COFUND 'Move in Louvain' fellowship, hosted by the *Centre Prospéro* of Saint-Louis University in Brussels, under the supervision of Professor Laurent Van Eynde, whom I take the opportunity to thank for his advise and support. I had the chance to present some of the reflections outlined in this article at different conferences (the International Conference 'Nouvelles productions du sensible. Merleau-Ponty et l'art contemporain', 22-23 March 2018, organised by C. Palermo at Université de Strasbourg; the International Conference 'Puissances esthétiques du virtuel: dispositif, forme, pensée', 28-30 March 2018, organised by O. Kobryn and M. Olivero at Université Sorbonne Nouvelle – Paris 3; the International Conference 'Endangered bodies: Representing and Policing the Body in Western Popular Culture', 8-9 October 2018, organised by A. Romão, E. Dinis, I. Furão at University of Lisbon). I would like to thank the organisers of these events for having invited me to discuss my research in progress and for the scientific exchange they have made possible, and likewise the scholars and researchers involved.

Beyond the Frame Boundaries?

In the past few years, as virtual reality approaches large scale and mainstream consumer use, a vibrant ecosystem has emerged. Immersive and interactive virtual environments perceived through head-mounted displays make us increasingly familiar with the experience of being incorporated into a new and autonomous world, conveying the feeling of being in a place other than our physical location, in a so-called frame-free infinite space, no longer limited by the boundaries which have traditionally characterized our perception of images. VR experience is frequently described as projecting the spectator 'beyond the screen', making her forget where she is, so that she can reach a 'sensation of total immersion and presence'.¹

Different contributions have emphasized in diverse ways the capacity of virtual environments to achieve a strong sense of presence and immersion, as well as the way recent developments in image-making techniques result in blurring the threshold between the image world and the real world.² Virtual reality interfaces set out a 360° illusory environment, in which different interfaces allow the spectator, or rather the experiencer, to wander around space, either by physical motion, head movement or motion simulation. Hence, the viewer is no longer subject to the segregation defined by the limits of the image, in which immersion is by definition never 'total'. As Steven Spielberg said in his speech at the symposium inaugurating the new building of the University of Southern California Film School: 'We're never going to be totally immersive, as long as we're looking at a square, whether it's a movie screen or whether it's a computer screen.'³

The idea of dissolving the image frame is also the theoretical pivot of Alejandro González Iñárritu's latest virtual reality work *Carne y Arena*, in which the Mexican director implemented unprecedented virtual technologies in order to tell the experience of a group of refugees trying to cross the border between Mexico and the United States. With this ground-breaking work (realized in coproduction with the Fondazione Prada and premiered at the 2017 Festival de Cannes, then presented at the Fondazione Prada Museum in Milan, at the Los Angeles County Museum of Art, and at Washington D.C.), Iñárritu wanted the spectators to be able to actually feel and immerse themselves in the migrants' precarious

¹ As it was stated, for instance, by the 2016 campaign for the launch of PlayStation VR device by Sony, 'Sony Playstation VR 2016 press kit'.

² See for instance: *Immersed in Technology: Art and Virtual Environments*, ed. by Mary Ann Moser and Douglas MacLeod (Cambridge, MA: MIT Press, 1996); Jay David Bolter, Richard Grusin, *Remediation: Understanding New Media* (Cambridge, MA: MIT Press, 1999); *Immersed in Media: Telepresence Theory, Measurement & Technology*, ed. by Matthew Lombard and others (Cham: Springer, 2015); *Immersion in the Visual Arts and Media*, ed. by Fabienne Liptay and Burcu Dogramaci (Leiden, NL: Koninklijke Brill, 2016).

³ Cited in Vittorio Gallese, Michele Guerra, *Lo schermo empatico. Cinema e neuroscienze* (Milano: Cortina, 2015), p. 280.

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existences; since for him, cinema was incapable of providing an effective first person experience, precisely because of its two-dimensionality, being — literally — too *limited* by the permanence of the edges of the screen:

My intention was to experiment with VR technology to explore the human condition in an attempt to break the dictatorship of the frame, within which things are just observed, and claim the space to allow the visitor to go through a direct experience walking in the immigrants' feet, under their skin, and into their hearts.⁴

The possibility of trespassing the threshold between image and reality is a *topos* that can be traced back over the ages within the history of art, since the famous story of the Greek painter Zeuxis, who is said to have painted such a realistic bunch of grapes that birds flew down to peck at it,⁵ but it also inspires multifarious contemporary artistic research, epitomized by Jeffrey Shaw's famous poetic statement, describing his own work as a discourse 'with the cinematic image, and with the possibility to violate the boundary of the cinematic frame — to allow the image to physically burst out towards the viewer, or allow the viewer to virtually enter the image'.⁶ The advent of a dissolution of the frame boundaries is pushed even further by art historian, critic and scientific and artistic director of Fondazione Prada Germano Celant, for whom the virtual interface involves the possibility not just to communicate but to incorporate and to coincide with the experience of the other:

With *Carne y Arena*, Iñárritu turns the exchange between vision and experience into a process of osmosis in which the duality between the organic body and the artificial body is dissolved. A fusion of identities arises: a psychophysical unity in which, by crossing the threshold of the virtual, the human strays into the imaginary and vice versa. It is a revolution in communication in which seeing is transformed into feeling and into a physical engagement with cinema: a transition from the screen to the gaze of the human being, with a total immersion of the senses.⁷

In a way, the new accessibility of virtual reality's 'unframed' space would entail the end of editing and *mise en scène* as they have been implemented since their appearance just over a century ago; indeed, the spectator is no longer subject to the segregation of the limits of the image and to the constraints imposed by cinematic and digital screens, thus inaugurating new forms of multimodal and immersive experience: 'While both are audio-visual, VR is all that cinema is not,

⁴ 'Carne y Arena (2017) press kit', Fondazione Prada, Milano.

⁵ See Pliny, *Nat. Hist.* 35, 65. On this topic see also Andrea Pinotti, 'The Painter through the Fourth Wall of China: Benjamin and the Threshold of the Image', in *Benjamin-Studien* 3, ed. by Sigrid Weigel and Daniel Weidner (Munich: Fink, 2014), pp. 133–49.

⁶ Jeffrey Shaw, discussion with Ueno Toshiya: 'We are Materialists, We Employ Science and Technology to Concretize the Virtual', in *Media Passage: InterCommunication '93: Agnes Hegedüs, Matt Mullican, Jeffrey Shaw*, ed. by Akihiko Yoshimura (Tokyo: NTT, 1993), p. 53.

⁷ 'Carne y Arena (2017) press kit'.

and vice versa; the frame is gone and the two-dimensional limits are dissolved... During this realistically unreal experience, our brain wires and most of our senses are tested'.⁸

Furthermore, the idea of a progressive convergence or even of a fusion between the beholder and the spectacle underpins a large part of recent VR contents deeply concerned with humanitarian, social and gender issues.⁹ Virtual reality appears to be the 'ultimate empathy machine'. First advanced by VR cinema director and producer Chris Milk — pioneer in the creation of 360° films like *Clouds Over Sidra* (2015) et *Waves of Grace* (2015), realized in collaboration with the United Nations — in his famous 2015 TEDtalk,¹⁰ this definition has become a *cliché* in the field of VR content industry. Milk maintained that virtual reality offers the most powerful tool for incorporating the perception of the other, or actually being another (an objective that is pursued by VR projects, such as BeAnotherLab¹¹ and their 'machine to be another', designed to measure the empathic response generated in the users through immersive experience). Hence, head-mounted displays and VR interfaces should not be understood simply as an artistic medium, but as an alternative mode of human consciousness, capable of changing minds as it allows to live the virtual as real.

The claim of empathy plays a dominant role in the discourse that revolves around the prospects of virtual reality, although it has been rejected by artists and directors experimenting with VR technologies or at least discussed from a more problem-raising perspective, as for instance by the creator of immersive journalism Nonny de la Peña, or by Kathryn Bigelow and Imraan Ismail, directors of the VR film *The Protectors* (2017) — whose subtitle, *Walk in the Ranger's Shoes*,¹² insists on the stakes of the debate we have just outlined.

Nevertheless, if we further examine the rhetoric of total immersion going hand in hand with the 'empathy machine' *cliché*, we realize that such an assumption informs and underpins the collective discourse and storytelling strategies through

⁸ Ibidem.

⁹ On this topic see the NECS Conference 2017 panel 'Virtual Reality and Cinema: Environments, Experiences, Narrations', with Luca Acquarelli, Matteo Treleani, Marcello Vitali Rosati and Francesco Zucconi, in particular Zucconi's talk: 'About the Limits of the "Humanitarian Virtual Experience"'.
¹⁰ See Chris Milk's *TEDtalk* <https://www.ted.com/talks/chris_milk_how_virtual_reality_can_create_the_ultimate_empathy_machine?language=en> [accessed 28 January 2019]. About the 'empathy machine' construct, see Joshua A. Fisher, 'Empathic Actualities: Toward a Taxonomy of Empathy in Virtual Reality', in *Interactive Storytelling*, ed. by Nuno Nunes, Ian Oakley and Valentina Nisi (Cham: Springer, 2017); Grant Bollmer, 'Empathy machines', in *Media International Australia*, 165.1 (2017), 63–76 <<https://doi.org/10.1177/1329878X17726794>> [accessed 28 January 2019].
¹¹ See <http://www.themachinetobeanother.org>. About these experiences and installations see Alice Lenay, 'Puis-je fondre mon visage dans le tien ? Corps-à-corps au casque de réalité virtuelle', *Archée*, december 2018.
¹² Adi Robertson, 'VR was sold as an "empathy machine" — but some artists are getting sick of it', *The Verge*, 3 May 2018 <<https://www.theverge.com/2017/5/3/15524404/tribeca-film-festival-2017-vr-empathy-machine-backlash>> [accessed 28 January 2019].

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which VR contents and devices are presented, more than it can describe the actual experience made possible by virtual environments.

In the present article, I will develop two main arguments about virtual reality experience, aiming to 1) undo the ‘empathy machine’ claim, and 2) discuss the assumption that in immersive environment the spectator faces a *frameless* visual field:

1) Through an analysis of Iñárritu’s *Carne y Arena* installation,¹³ I intend to show that the great potential of VR creations relies on the possibility of experiencing a fundamental *gap* or interval, as much as on the intensity of the feeling of presence they convey. In fact, it should be noted that what is supposed to be — according to the rhetoric of total immersion — an hermetically sealed and seamless reality, on the contrary, is pierced by a number of discontinuities in perception, depending both on narrative and environment design, and on the technical conditions of VR interfaces and devices. As a matter of fact, in virtual environments the experiencer faces the continuous emergence of a fundamental discrepancy between the virtual visible world and the physical presence of her own living body, exemplified by the fact that, while wearing a head-mounted VR device, the experiencer is not able to see her body parts but, only if the interfaces allow it, those of her avatar.

It is likely that in the near future the rushing development of VR interfaces will afford us an ever more fluid experience of immersive environments. Regardless, going against the grain of the mainstream discourse about virtual reality, I shall argue that, far from being a flaw to be overcome by technological enhancement — by a progressive miniaturization or prosthetic incorporation of technical devices —, *the experience of such a gap is one of the most promising and outstanding aspects of VR experience*, whose sense-making potentialities, so far largely neglected, have only begun to be explored, theoretically and practically, especially by contemporary artworks, in which virtual reality is establishing itself as the forefront medium for creative expression.

2) Furthermore, through this analysis, I aim to turn around the general idea that

¹³ I have been able to visit and experience A.G. Iñárritu’s *Carne y Arena* at the Fondazione Prada in Milan in Summer 2017. Despite virtual reality being increasingly popular in thematic festivals and arcades, *Carne y Arena* has been one of the very first VR works to be accessible for an extended period of time (7 June 2017 – 15 January 2018), continually and in the same location. This meant that for the first time it was possible to discuss with colleagues and friends the ‘same’ VR experience, just as we usually do with films, although the stories told by the experiencers seemed to differ a lot. This was due not just, as one might think, to the variability of the interactive environment explored, but mostly because — for a number of reasons I cannot indulge in here — the experience was remembered and told quite differently from the way one is used to describe a film plot or even a real life experience, resembling more the way one tries to recall a dream while telling it, overwriting and transforming its content through the prism of language and previous experience. I would like to thank those with whom I have been able to discuss this unique experience — like among initiates — for having shared their impressions and insights with me, especially Andrea Pinotti, Giacomo Mercuriali, Pietro Conte, Federica Cavaletti, Mauro Carbone, Pietro Montani, and Lorenzo De Cani.

in virtual environments the visual field is frameless or, to take Iñárritu's words, set free from the 'dictatorship of the frame'. Indeed, although virtual environments allow the spectator-experiencer to access a 360° tridimensional space, the human visual apparatus will always determine a cut into a potentially unlimited visual field, revealing only a portion of the visible at a time — or, in phenomenological terms, through successive impressions or in Husserl's phenomenological terms *profiles* or *off-shadings* (*Abschattungen*).¹⁴ Therefore, to understand the viewer's experience in virtual reality, we need to focus on the constant discontinuity and aberration brought about by the very movement of the gaze as much as on its immersive aspects. In Henri Maldiney's words, we need to 'give back to the gaze what makes it a gaze', that is, 'its marginal field and horizon'.¹⁵

Thus, the hypothesis I intend to develop is that, if in virtual reality the frame of the image,¹⁶ understood as the historical construct since Renaissance Art, seems to disappear, then the very function of *framing*, understood as the mobile limit operating an ontological cut in the visible and sensible world of the viewer, does not dissolve, but, rather, is carried out by the experiencer's body and embodied gaze.¹⁷

Bodies at the Edges. Virtually Present, Physically Invisible

Virtual environments do not just provide the experiencer with multiple scenarios to be put into action, but more significantly they give the possibility to create perceptual shifts, counter-act habitual perceptions and conventions, and even to redirect the attention to the awareness of one's own embodiment.¹⁸ This is the case of Charlotte Davies' pioneering piece *Osmose* (Musée d'art de Montreal, 1995),¹⁹ a VR creation that has become iconic for the way it diverts and displaces the imaginary of immersive experience at the very beginning of virtual reality technologies and implementations. In contrast to the visual

¹⁴ Edmund Husserl, *Ideas I: Ideas for a Pure Phenomenology and Phenomenological Philosophy*, trans. by Daniel O. Dahlstrom (Indianapolis, IN: Hackett, 2014).

¹⁵ Henri Maldiney, *Art et existence* (Paris: Klincksieck, 2003), p. 28 (my translation).

¹⁶ About the aesthetic, epistemological and anthropological implications of the dispositive of the frame, see: Louise Charbonnier, *Cadre et regard. Généalogie d'un dispositif* (Paris: L'Harmattan, 2007); *Cadre, seuil, limite. La question de la frontière dans la théorie de l'art*, ed. by Thierry Lenain and Rudolf Steinmetz (Bruxelles: La Lettre volée, 2011); *La cornice. Storie, teorie, testi*, ed. by Daniela Ferrari and Andrea Pinotti (Milano: Johan & Levi, 2018).

¹⁷ For an interpretation of the cinematic experience in its inseparable connection with embodied spatiality and human bodily gestures see Barbara Grespi, *Il cinema come gesto. Incorporare le immagini, pensare il medium* (Bergamo: Aracne, 2017).

¹⁸ Mark B.N. Hansen, *Bodies in Code: Interfaces with Digital Media* (New York: Routledge, 2006) and *New Philosophy for New Media* (Cambridge, MA: MIT Press, 2004).

¹⁹ Oliver Grau, *Virtual Art: From Illusion to Immersion* (Cambridge, MA: MIT Press, 2003), pp. 193–204, 207–11; Hansen, pp. 107–37; Laurie McRobert, *Char Davies' Immersive Virtual Art and the Essence of Spatiality* (Toronto: University of Toronto Press, 2007).

hegemony of photorealism, which was the mainstream tendency in graphic design at the time and is still largely dominant nowadays, the Canadian artist outlined a minimal and symbolic environment, whose aesthetic features were visually characterized by a certain emergence of the code. In particular, instead of implementing manual commands, the virtual interface was — surprisingly — controlled through the user's respiration and equilibrium system. By training the user's body with alternative orientation and motor coordinates in exploring a virtual tridimensional space, *Osmose* aimed at undoing our pre-comprehension of space, generally based on the assumptions of Cartesian-Newtonian physics, to transcend the 'traditional interface boundaries between machine and human', while re-affirming our corporeality.²⁰

A more recent work, stemming from the new wave of VR creations that in the last years have been characterized by the implementation of head-mounted displays,²¹ which take on what we can call a *poetics of the gap*, is Hayoun Kwon's *The Bird Lady* (Winner of the *Prix Découverte des Amis du Palais de Tokyo* 2015). The installation conceived by the Korean artist gives access to the imaginary world of a mysterious woman, drawn up by recollections of a former drawing teacher of the artist. Through an overlapping of collective and individual memory, the work plays on the confusion between real memories and dreams, between documentality and fantasy, precisely by building on the possibility of desynchronized effects and on the non-coincidence between the environment that unfolds — visually — to the viewer and the concrete space she is called to — physically — explore, while being immersed in the VR experience.

Far from deliberately diverting the interface provided by virtual environments, Iñárritu's *Carne y Arena* is rooted in a different and somehow more classic tradition. Drawing on the director's experience in mainstream narrative cinema more than in contemporary art, the installation seeks to provide the experiencer with a fluid immersive experience, not only by virtue of its hermetically sealed audio-visual tridimensional environment, but also through an engaging storytelling structure.²² However, as I will suggest, *Carne y Arena's* outstanding immersivity and engaging scenario surreptitiously prepare the ground in which the experiencer can be brought to sink into the striking experience of a perceptive gap.

In order to understand this process, let us first examine what falls apparently *out of the frame* of the artwork, that is, the two sections that, respectively, precede and follow the immersive VR experience. This *parergon* is by no means incidental and must be considered as part and parcel of the installation, essential for

²⁰ See Char Davies' site: <<http://www.immersence.com/>> [accessed 28 January 2019].

²¹ About virtual reality since the implementation of head mounted displays see: Philippe Fuchs, *Théorie de la réalité virtuelle: Les véritables usages* (Paris: Transvalor-Presses des mines, 2018); *La realtà virtuale. Dispositivi, estetiche, immagini*, ed. by Cristiano Dalpozzo, Federica Negri and Arianna Novaga, (Milano: Mimesis, 2018).

²² See John Bucher, *Storytelling for Virtual Reality: Methods and Principles of Crafting Immersive Narratives* (New York: Routledge, 2018).

delineating the experience designed by Iñárritu, that results from the interaction of these three inseparable and reciprocally intertwining sections.

Being introduced into the space of the exhibition, the experiencer is asked to take off her shoes and socks and put them in a locker, to get into a cold grey room — similar to a holding cell or operating room, which is the reconstruction of a *hielera*²³ —, where there are piles of shoes and other objects onto the walls. A signboard explains that such personal items belonged to men and women who probably lost their lives trying to reach the US border; these objects have been found in the desert and collected by two artists as part of an art installation. In Western visual culture, this composition bears a powerful symbolic reference to the Shoah (evoking the image of the thousands of shoes found in the Auschwitz-Birkenau camp; fig. 1), but it also alludes to an Adamitic nudity and castration, such as when we dream of leaving our home in slippers, partially undressed, or barefoot. Without shoes, a human being is soon deprived of the status of Western urbanized citizen, insofar as sidewalks and paved roads still represent for many cultures the emblem of civilization and wealth. In the text of presentation placed at the entrance of the exhibition, Iñárritu warns the visitor: ‘In the desert, once you take your shoes off you are fucked.’ Thus, the Mexican director invites the experiencers of the installation to figuratively put themselves *in the shoes* of the migrants trying to cross the United States-Mexican border, with all the paradoxical criticality that this movement of *alteration* entails.²⁴

Then, a red light in the grey room indicates that the visitor can go through the door to access the large dark room — maybe an allusion to the darkness of cinema? — where the exhibition’s assistants help her to wear a rucksack and an Oculus Rift headset. As if to emphasize the desire to overcome the limits of the cinematic apparatus, the first sensation that is given to the experiencer is not an audio-visual one but a *tactile* one: the uncomfortable contact between the feet and the cold gravel that entirely covers the floor. Such a multimodal interface will be amplified during the experience by the interplay of temperature, air blowing, and low frequency vibrations.

Once the VR experience begins, the experiencer finds herself in the desert, in the dim light of dawn, surrounded by shrubs and plants of Joshua tree. Soon a group of migrants appears in the scene: exhausted men, women and

²³ United States immigration authorities routinely detain men, women, and children, including infants, in frigid holding cells, sometimes for days, when they are taken into custody at or near the US border with Mexico. Migrants and US Customs and Border Protection (CBP) agents alike commonly refer to these cells as *hieleras* (‘freezers’).

²⁴ About the notion of empathy and its articulation in aesthetic experience cf. *Empathie*, ed. by Alain Berthoz and Gérard Jorland (Paris: Odile Jacob, 2004); *Les Paradoxes de l’empathie*, ed. by Patricia Attigui and Alexis Cukier (Paris: CNRS, 2011); *Empathie et esthétique*, ed. by Alexandre Gefen and Bernard Vouilloux (Paris: Hermann, 2013); Andrea Pinotti, *Empathie. Histoire d’une idée de Platon au posthumain* (Paris: Vrin, 2016); Serge Tisseron, *Empathie et manipulations* (Paris: Albin Michel, 2017); Vittorio Gallese, Michele Guerra, ‘L’empathie d’une machine’, in *Des pouvoirs des écrans*, ed. by Jacopo Bodini, Mauro Carbone and Anna Caterina Dalmasso (Paris: Mimesis, 2018), pp. 153–70.



Fig. 1 Auschwitz-Birkenau, photography by the Soviet Army (Ukrainien Front)

children; among them, a woman has broken her ankle and is moaning for help in Spanish, a child is walking with his mother, a man tells people not to slow down... Instinctively, the experiencer will try to get close to the woman in pain, but, trying to approach the characters or to interact with them, she will soon realize that no one notices her presence. Like ghosts, the bodies of the characters pass through the body of the experiencer, or, rather, the experiencer acts like a ghost among them. Walking barefoot on the cool gravel that covers the room, the viewer starts to experience the contrast between the feeling of presence and ‘being there’ and the invisibility of her own body; in other words, between her tactile and proprioceptive sensations and visual perception.²⁵ She feels her own body, but she cannot see it.

Suddenly, the sound and wind of a helicopter — the movement of air being

²⁵ In his article ‘Virtualmente presente, fisicamente invisibile. Immersività ed emersività nella realtà virtuale a partire da *Carne y Arena*’ (*La realtà virtuale. Dispositivi, estetiche, immagini*, ed. by Cristiano Dalpozzo, Federica Negri and Arianna Novaga, (Milano: Mimesis, 2018), pp. 119–34, p. 128), Adriano D’Aloia suggests that tactile stimulations implemented in Iñárritu’s VR installation can also induce potentially *emersive* effects. About immersive and emersive effect as regards video games experience see Piotr Kubinski, ‘Immersion vs. emersive effects in videogames’, in *Engaging with Videogames: Play, Theory, and Practice*, ed. by Dawn Stobbart and Monica Evans (Oxford: Inter-Disciplinary Press, 2014), pp. 133–41.

produced by a wind machine — bursts onto the scene appearing overhead, its spotlight bearing down. By means of very deep basses the ground starts to tremble. Soon the migrants and the spectator are reached by two SUVs of the American Border Patrol. The police officers with guns and dogs order everyone to lay down on the ground, while some of the migrants escape or hide into the scrub. It is chaos. People are screaming, a man trying to escape — probably a *coyote*²⁶ — is shot by the police. From a condition of complete passivity and helplessness, the experiencer observes these men and women treated like criminals, forced to take off their shoes and lay on the ground, while the flesh and the sand — *carne y arena* — mingle together.

Facing the violence of the scene, and being unable to help the migrants or to be treated like them, the experiencer senses increasing discomfort and awkwardness, as she perceptively realizes that, despite being right in the middle of the spectacle, she is in fact an invisible viewer. Her looking eyes are no longer those of a fleshy body, but of body one can look through, as if her whole body had transformed into a phantom limb. As it becomes invisible, the surface of the experiencer's body is then displaced, and the viewer faces a non-coincidence between her own *body image* and her motor and proprioceptive system.²⁷ Deprived of her visible flesh, she is unable to act within the environment, and she realises that she is in fact 'virtually present', but 'physically invisible', as the subtitle of the installation suggests.²⁸ As the action carries on around her, the experiencer is progressively led to acknowledge that the passivity imposed to her body, which is 'amplified by the specific *aisthesis* implemented by the installation', is nonetheless a 'structural element of the machinery',²⁹ that alone could allow the viewer to participate, in her way, in the migrants' existential condition.

²⁶ *Coyote* designates the smugglers who illegally transport or lead migrants through the border in exchange for large sums of money.

²⁷ Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. by Colin Smith (London: Routledge, 2005). About the distinction between body image and body schema see Shaun Gallagher, 'Body Schema and Intentionality', in *The Body and the Self*, ed. by Jose Louis Bermudez and others (Cambridge, MA: MIT Press, 1995) and Shaun Gallagher, Jonathan Cole, 'Body Image and Body Schema in a Deafferented Subject', in *The Journal of Mind and Behavior*, 16.4 (1995), 369–90; systematically discussed as regards Merleau-Ponty's work also by Emmanuel de Saint Aubert, in *Être et chair. Du corps au désir: l'habilitation ontologique de la chair* (Paris: Vrin, 2013), showing that Merleau-Ponty makes no essential distinction between body image and body schema.

²⁸ For an analysis of the experience of *Carne y Arena* and especially for an interpretation of the meaning of the subtitle of the installation 'Virtually present, physically invisible', see also Andrea Pinotti, 'Immagini che negano se stesse. Verso un'an-icologia', in *Ambienti mediali*, ed. by Pietro Montani, Dario Cecchi and Martino Feyles (Milano: Meltemi, 2018), pp. 232–33; Ruggero Eugeni, 'Les Médias immersifs, une question de présence', *The Conversation*, April 2018; Adriano D'Aloia, 'Virtual reality immersion and emersion in Alejandro González Iñárritu's *Carne y Arena*', *Senses of Cinema*, 87 (June 2018).

²⁹ '[Il visitatore prende atto che] quella passività è un elemento strutturale della macchina spettacolare complessiva ed è in ultima analisi l'unico modo davvero sensate di partecipare all'esperienza reale del piccolo gruppo dei profughi, e forse, più generalmente, all'esperienza dell'essere profugo in quanto condizione esistenziale', Pietro Montani, *Tre forme di creatività: tecnica, arte, politica* (Napoli: Cronopio, 2017), p. 135.

The perceptive gap she senses overlaps with the social and cultural gap that prevents any Western, wealthy, welfare citizen, and passport-holder Museum visitor to completely coincide with the migrants' experience, with their existence *on the edge* and their bodies *at the edges*. Whereas in other VR film productions concerned with social and humanitarian issues, the viewing subject can still adopt a voyeuristic attitude which cinematic spectatorship has developed in the viewer, in *Carne y Arena*, the extraordinary immersivity of the environment makes — by contrast — the distance imposed by the interface more dramatic and almost unbearable for the viewer. Through this distancing effect,³⁰ the rhetoric of empathy is pierced, as the experiencer, far from being immersed in an 'alternative' and 'seamless' reality, actually digs herself deeper in this gap, from which springs the most outstanding aspect of Iñárritu's VR work, even going against the intentions declared by the director.

If, as Merleau-Ponty pointed out, the viewer is always a visible viewing, namely part of the visible world,³¹ *Carne y Arena*'s specific interface forces the spectator into an impossible body, making her an impossible viewer. In fact, in Iñárritu's installation, the visibility of the body is pushed at its edges, so that the spectator experiences the boundaries of her own body and faces the impossibility of the specific position she is called to assume. Hence, instead of emphasizing the participation in the migrants' condition, Iñárritu makes the experiencer to feel the failure of any ethical voluntarism, revealing a conception of empathy as intercorporeality,³² to borrow again Merleau-Ponty's expression, i.e. empathy not just as a possible coincidence with the feeling of the other, but rooted in the common experience of our body and of its embodied *situation* within the *flesh of history*. According to the philosopher, the common experience of *being flesh* is deeply concerned with what he calls an *imminent reversibility* between our touching and being touched, viewing and being visible, thus implying the experience of a gap and non-coincidence — the viewer is always a constitutive part of the visible world, but never coincides with it — as fundamental to our bodily and embodied existence.³³

Before resuming the analysis of Iñárritu's work, let us point out that the definition of 'virtually present' but 'physically invisible' is also a powerful reference to the bodies of the migrants themselves, as they are *politically* invisible,

³⁰ About the dialectics between immersion and distancing in VR cinema, see Luca Acquarelli, 'L'esperienza dialettica del cinema VR: tra immersione e distanziamento', in *La realtà virtuale*, pp. 107–18.

³¹ Maurice Merleau-Ponty, *The Visible and the Invisible*, trans. by Alphonso Lingis (Evanston, Illinois: Northwestern University Press, 1968).

³² Maurice Merleau-Ponty, 'The Philosopher and his Shadow', in *Signs*, trans. and ed. by Richard C. McCleary (Evanston, IL: Northwestern University Press, 1964).

³³ For a discussion of Merleau-Ponty's notion of flesh see Mauro Carbone, *La Chair des images. Merleau-Ponty entre peinture et cinéma* (Paris: Vrin, 2011) and Mauro Carbone, David Michael Levin, *La carne e la voce. In dialogo tra estetica ed etica* (Milano: Mimesis, 2003); de Saint Aubert, *Être et chair. Du corps au désir*.



Fig. 2 *Carne y Arena* (2017) press kit, Fondazione Prada, Milan.

eluded or erased from the map of social space. The migrant's body is either left at the edges of the shared space of the community or screened, registered, and segregated, while — if we continue to outline the installation's topology — the western (metaphorically white) body, whose visibility is overexposed, medically and technologically enhanced, reveals to be invisible in its vulnerable materiality: despite being exhibited and manipulated, the white western body is often forgotten as flesh, often taken for granted, along with its rights, integrity, and whiteness. Such an invisibility is eminently expressed by Franz Fanon, when he affirms that while the black are always forerun by their blackness, the white always carry the colour of their skin behind their back.³⁴

Thus, in *Carne y Arena* gaps and interruptions multiply, for the limits of the image and those of the body intertwine, and overlap with another kind of limits, those that are established by international borders, between U.S. and T.H.E.M., as expressed by the installation's poster (fig. 2). Indeed, Iñárritu's installation questions the limits of the body — its inner as well as its outer boundaries —, as they are inseparable from the biopolitical boundaries imposed by social and national borders.

This two-folded dimension of Iñárritu's work underpins an ontological condition. In the 'Introduction' to *Bodies That Matter*, Judith Butler pointed

³⁴ Frantz Fanon, *Peau noire, masques blancs* (Paris: Points, 2015).

out that, trying to make of the materiality of the body an object of thought, she invariably faced a resistance of the subject to be delimited within fixed boundaries. This is perhaps due to the fact that bodies themselves are always concerned by a ‘movement beyond their own boundaries’ and ‘a movement of boundary itself’.³⁵ But, shall we not say the same for the image? Since, in *Carney Arena*, the limits of the body and the geopolitical limits — always entailing the possibility of their transgression — also overlap with the problematic borders of the frame, and, as a result, the segregation imposed by the frame to the viewer’s visual field significantly mirrors itself in the movement of segregation of the bodies in the geographical space.

Reframing Immersive Spectatorship

While the boundaries of the spectator’s body are perceptively solicited, the construction of the VR experience is concerned by a further (quasi-cinematic) cut, when, suddenly, a bright light floods the scene, imposing a significant break in the continuity of the action, such that could be interpreted as indicating an ellipse or flashback in classic film editing. Gradually, in the immersive environment a vision appears: in the dusk, some of the people from the previous scene are sitting at a long table, the wounded woman is drinking some water, the child is fiddling with something, while someone else is singing a lullaby. Then, an undetermined object takes shape from the white surface of the table: it is a capsizing boat full of people, it sways into the waves, before sinking quietly.

After a few seconds, this strange digression closes abruptly, leaving the viewer in a state of uncertainty and suspense. Back at the heart of the action, an officer is aggressively interrogating a man, who is taken to be suspect because of his good knowledge of the English language. While the young man answers that this is due to his professional practice as a lawyer, the officer pursues his interrogation and bangs his head on the hood of the car. Spontaneously, led by the movement of the attention designed through the storytelling strategies, the experiencer tends to get closer to the live action, and, at this very moment, the officer finally turns around, stares back at her and shouts: ‘and you, what do you want?’. Before she can even obey the police’s orders, the officer points his weapon at her, but immediately everything dissolves into a bright whiteness. Then, for a few seconds, the desert, now empty, reappears, quiet and calm, and slowly the stereoscopic vision vanishes.

It is noteworthy that the immersive experience concludes with this *topos* — the breaking of the fourth wall by the policeman staring back and shooting at the audience — that in a way condenses the whole history of film, since this cinematic figure can be traced back to the famous shot of Edwin S. Porter’s *The Great Train*

³⁵ Judith Butler, *Bodies That Matter: On the Discursive Limits of Sex* (London: Routledge, 1993), p. VII.



Fig. 3 *Carne y Arena*'s installation, Fondazione Prada, Milan (2017).

Robbery (1903),³⁶ a film that is considered as the very beginning of the western genre and the paradigm for the narration of classic Hollywood cinema, and that included this special effect proceeding from the so-called cinema of attractions.³⁷ Therefore, through this final allusive *punch line* and implicit quotation, Iñárritu seems to reconnect to the history of the moving image, with the powerful reference to the figure of direct address, and to affirm the continuity between his immersive realisation and the tradition of narrative cinema from which it springs, as much as it aims to break the boundaries of the frame and the bidimensional surface of the screen.³⁸

At the exit of the dark room, the experiencer gets her shoes back and passes through a long corridor. One of the walls of the corridor is made by parts of the separation wall that was used along the US-Mexican border (fig. 3). The material presence of such a wall echoes the perceptive gap described above, as it separates the viewer from the space of the installation that lays beyond it, still visible through the holes in the sheet of metal, as much as from the experience of men and women she has encountered. At the end of the corridor, the experiencer finds another room — second *hors œuvre* that, as I suggested, has to be considered as

³⁶ In Porter's film, in a full-frame medium shot, the character leading the train robbers looks out of the screen and fires his gun straight at the viewing audience. The shot of the gun was the final shot of the film, or alternatively it was placed at the very beginning of the film to act as an attraction for the spectators.

³⁷ See Elena Dagrada, *The Great Train Robbery (Edwin S. Porter, 1903) e la storia del cinema* (Milano: Mimesis, 2011).

³⁸ About direct address in cinema see Tom Brown, *Breaking the Fourth Wall: Direct Address in the Cinema* (Edinburgh: Edinburgh University Press, 2012).

The Body as Virtual Frame: Performativity of the Image in Immersive Environments

a part of the installation as a whole — in which small displays are arranged into as many niches. They show moving image-portraits of the people who lent their bodies to the VR creation, impersonating themselves and their own personal autobiographic experience. Through these small screens they finally stare back at the viewer. Some sentences, condensing fragments of their stories, appear superimposed on the faces in soft focus. They all come from different countries in Central and South America, some of them have attempted the trip several times, trying to escape dangers and desperate conditions or to reach their family members in the United States.

But another contrast is soon introduced, such that prevents the simple trajectory of empathy. One of the stories stands out in particular and usually draws the attention of the experiencer, revealing the problematic nature of any post-colonial voluntarism and the persistence of racist stereotypes: it is the statement of a middle-age Caucasian American officer. As reported by his testimony, while patrolling the border, this man encountered a group of migrants abandoned in the desert by a *coyote*. Despite his help and efforts, one of the men, already dramatically dehydrated, died in his arms. The presence of this white (male) character has a double-degree effect: first, by echoing the immersive scene the experiencer has just gone through, this story emphasizes the frustration and helplessness that she sensed with regards to the migrants' condition. Secondly, as a result, the experiencer — who can't help empathizing with the Caucasian officer, more than with the unimaginable experience of desperate migrants — slips back in the gap she has just experienced, that assumes a deeper anthropological significance, dramatically pointing at the obstacles in the process of decolonizing the Western gaze.³⁹

This seems to me the icastic meaning that is embedded in the figure of the boat, that Iñárritu places at the very heart of the installation. This image, that has become the universal symbol of the international refugee crisis, was epitomized and exploited by many works in cinema and contemporary art in the last few years — from Gianfranco Rosi's *Fuocoammare* (2016) to Ai Weiwei's works and installations (figs 4 and 5) —, until it started to fade away and lose its meaning. But, more significantly for the trajectory of our reflection about immersive spectatorship, the boat also evokes a powerful metaphor in Western thought: that of the *shipwreck with spectator*, first outlined in Lucrece's *De rerum natura* and theorised by Hans Blumenberg's essay.⁴⁰

Indeed, running counter to the distance and detachment that has defined aesthetic judgement after Kant, *Carne y Arena* puts the spectator within the spectacle and at the same time places her in an irreducible gap. Iñárritu's installation drives us into this gap, depriving us of our own visibility and flesh,

³⁹ On the difference between post-colonialism and decoloniality see Gurinder K. Bhambra 'Postcolonial and Decolonial Dialogues', *Postcolonial Studies*, 17.2 (2014), pp. 115–21.

⁴⁰ Hans Blumenberg, *Shipwreck with Spectator: Paradigm of a Metaphor for Existence* (Cambridge, MA: MIT Press, 1996).



Fig. 4 Ai Weiwei, *Liberò*, Palazzo Strozzi, Florence (2016)



Fig. 5 Ai Weiwei, Installation *F Lotus*, Belvedere Museum, Wien (2016)

showing that we would never be able to completely conflate with the image, and revealing to which extent our visual field is crossed by discontinuities, unconscious lines, and invisible borders.

Thus, in the virtual environment designed by *Carne y Arena* the spectator does not experience a total and frameless immersion, if only for the fact that the space wherein one is allowed to move — in Iñárritu's just as in other VR installations — has limited boundaries. But, more significantly, the editing and framing have been working at every moment, enabled not just by the narrative interface, but also by the *performative response of the viewer*. In fact, if we follow Merleau-Ponty, the simplest perception is already a form of *expression*, perceiving is already a way of acting since it always entails the movement of the body, and, in other

words, since our perception *expresses* the world, recreating it.⁴¹ Also, according to the enactive approach, drawing on phenomenology and cognitive science, and aiming to encompass an understanding of perception as fundamentally passive: ‘Perception is not something that happens to us, or in us. It is something we do’, since the world makes itself available to the perceiver through bodily conduct.⁴²

Thus, in virtual reality, the experiencer can direct and point her gaze in a tridimensional surrounding environment, adopting different patterns of visual behaviour, tracing with her eyes what in film analysis would be called panoramic shots, travellings, changes of perspective, and so on.⁴³ As a result, the embodied gaze of the experiencer acts like a *virtual frame*, ensuring the functions of selection, comparison, association and dissociation, hitherto described in film theory as framing, camera movements and editing.

Hence, the experience of virtual environments forces us to think through embodied spectatorship, and to further explore the stakes of the debate developed by the phenomenology of film experience, which has significantly deepened the tactile and proprioceptive dimension of cinema in the last decades.⁴⁴ In a way, virtual reality brings us to face an *epistemological shift* in the conception of spectatorship, similar to the one that was brought forth in the history of cinema by the introduction of depth of field and long take or *plan-séquence*, which aroused a radical reassessment of the spectator’s role, especially in the work of André Bazin.⁴⁵ Indeed, these aesthetic constructs and visual strategies, that

⁴¹ See in particular Maurice Merleau-Ponty, *Le Monde sensible et le monde de l’expression: cours au Collège de France*, ed. by Emmanuel de Saint Aubert and Stephen Kristensen (Geneva: Metis Presses, 2011), as well as *Phenomenology of Perception*, 244. See also Raphaël Gély, *Les Usages de la perception. Réflexions merleau-pontiennes* (Louvain: Peeters, 2005).

⁴² Alva Noë, *Action in Perception* (Cambridge, MA: MIT Press, 2004), p. 1; see also Francisco J. Varela, Evan Thompson, Eleanor Rosch, *The Embodied Mind: Cognitive Science and Human Experience* (Cambridge, MA: MIT Press, 1992).

⁴³ For a discussion of the redefinition of the experience of the intradiegetic spectator in VR cinema see D’Aloia, ‘Virtualmente presente, fisicamente invisibile’, p. 130.

⁴⁴ See for instance the seminal study of Vivian Sobchack, ‘What My Fingers Knew: The Cinesthetic Subject, or Vision in the Flesh’, in *Carnal Thoughts* (Berkeley: University of California Press, 2004), pp. 53–84; as well as Laura U. Marks, *The Skin of the Film: Intercultural Cinema, Embodiment, and the Senses* (Durham, NC: Duke University Press, 2000); and *Touch: Sensuous Theory And Multisensory Media* (Minneapolis: University of Minnesota Press, 2002); Jennifer M. Barker, *The Tactile Eye: Touch and the Cinematic Experience* (Berkeley: University of California Press: 2009).

⁴⁵ André Bazin, *What Is Cinema?*, 2 vols, ed. by Dudley Andrew, trans. by Hugh Gray (Berkeley: University of California Press, 2004), in particular ‘The Evolution of the Language of Cinema’, ‘The Italian School of the Liberation’, ‘In Defense of Mixed Cinema’, and ‘William Wyler ou le janséniste de la mise en scène’, not included by Gray in his selected two volume translation of Bazin’s work. See also Dudley Andrew, *André Bazin* (Oxford: Oxford University Press, 2012); Michele Bertolini, ‘Lo spettatore attivo di André Bazin: note sulla ricezione cinematografica’, in *L’esperienza estetica*, ed. by Maddalena Mazzocut Mis (Milano: Mimesis, 2008). Otherwise, it is worth noting that the emancipation of the spectator, elaborated by Bazin, ultimately entails a problematically normative attitude, who led the French critic to privilege a cinema which lets appear an autonomous and self-emerging reality, able to elicit the spectator’s creative response, whereas a cinema which implements a narrative and *sutured* editing would tend to inhibit a free interpretation of the image, by delivering to the beholder a sense already constructed. Under

took shape within the film as historical construction, obliged theorists to think of the spectator's experience not just as an essentially passive reception, but as constantly involved in an attribution of meaning and progressive readjustment of it, in which the interplay between the belief in the world represented and the reflection on such a reality results in an 'active' participation of the beholder.⁴⁶

Otherwise, such a paradigm shift in the understanding of cinematic experience has been developed by Mikel Dufrenne in his essay 'Le Spect-acteur du film',⁴⁷ in which the French phenomenologist urges us to beware of the idea of the spectator as being completely absorbed and identified with the story and with camera movements, and outlines instead the active cognitive and aesthetic dimension which is key to the spectator's or, as he writes, the 'spect-actor's' experience.⁴⁸ Asserting that human visual experience always entails a fundamental hermeneutic activity, Dufrenne highlights how cinema always — even though this becomes evident only in experimental cinema — offers the possibility of a distancing effect and even a space for phenomenological reduction, allowing the spectator to operate choices as well as to reflect on her own perception by activating aesthetic judgment, which addresses not just the story, but the way it is told, that is, the way the camera works in order to reinvent it.⁴⁹

Thus, contemporary virtual environments call for the theory of the 'active spectator' to be further developed by considering the fundamental connection and co-operation of activity and passivity, the latter being understood not simply as absence of action, but as a *latence* and as a form of embodied praxis, which is always implied by the act of looking.⁵⁰

If, so far, it is the spectator's sensori-motor interaction, playfulness and transmedial agency which have been variously examined,⁵¹ paradoxically it is

a philosophical angle, this perspective has been later investigated by Jacques Rancière in *Le Spectateur émancipé* (Paris: La Fabrique, 2008).

⁴⁶ About visual attention in virtual reality environments: Elena Hitzel, *Effects of Peripheral Vision on Eye Movements: A Virtual Reality Study on Gaze Allocation in Naturalistic Tasks* (Berlin: Springer, 2015); Shi Huang, 'A Method of Evaluating User Visual Attention to Moving Objects in Head Mounted Virtual Reality', in *Design, User Experience, and Usability: Theory and Practice*, ed. by Aaron Marcus and Wentao Wang (Cham: Springer, 2018).

⁴⁷ Mikel Dufrenne, 'Le Spect-acteur du film', in *Esthétique et philosophie* (Paris: Klincksieck, 1981), pp. 169–78.

⁴⁸ 'Si profondément immergé qu'il soit dans le spectacle, éprouve-t-il un certain sentiment de plaisir ou de déplaisir; et le jugement tient dans ce sentiment où déjà le sujet pointe. Mais il peut aussi s'affirmer plus explicitement en objectivant son jugement. Et il peut encore s'employer à le justifier: en quoi il adopte, avec plus ou moins de bonheur, l'attitude du critique', Dufrenne, pp. 174–75.

⁴⁹ Dufrenne, p. 175.

⁵⁰ For an analysis of this process as regards film experience see also Gallese and Guerra, *Lo schermo empatico*.

⁵¹ Mel Slater, Martin Usoh, 'Body Centered Interaction in Immersive Virtual Environments', in *Artificial Life and Virtual Reality*, ed. by Nadia Magnenat-Thalmann and Daniel Thalmann (New York: Wiley, 1994), pp. 125–48; Ralph Schroeder, *The Social Life of Avatars: Presence and Interaction in Shared Virtual Environments* (London: Springer, 2002); Gordon Calleja, *In-Game: From Immersion to Incorporation* (Cambridge, MA: The MIT Press, 2011).

precisely the operationality and performativity of the embodied gaze that is still largely disregarded and needs to be examined, so as to shape a new vocabulary and conceptual tools to describe the spectator's experience of immersive environments. In fact, interactivity cannot be limited to the fact that the experiencer is now able to move,⁵² respond and direct her actions towards certain goals within a virtual space, but brings as well into play new forms of voyeurism and narcissism, and more generally the implications regulating the gesture of seeing and being/not being seen. In this perspective the performativity of the gaze — the gaze working as a *virtual frame* — is inseparable from the agency or performativity of the image itself.⁵³ The etymological sense of *per-formativity* allows us to better outline the connection to the function of framing I am trying to outline. In fact, the term 'performance' is not related to 'form' — as one might think — if not by successive phonetic alteration; it comes instead from the ancient French 'par-fourmir', from the proto-German '*frumjan', 'fram-' ('achieve', 'execute'),⁵⁴ the very same root for 'frame', the two terms ultimately referring to the sense of 'from' expressing 'movement away', which, with regard to the image, can be connected to the original movement of the figure-ground appearance.

Hence, if we try to outline how the living phenomenal body assumes the functions of the frame, this should not be understood in the sense that the practice of framing derives from the tradition of Modern representation, the *cornice* or *cadre* of the picture, external to the image, which descend from Renaissance theories of painting,⁵⁵ nor in the wake of the photographic and cinematic shot that cuts out a portion of the visible world, establishing an off-screen space. I will rather use the term *frame* to express that the spectator's embodied vision implements an eminently *figurative* structure — with reference to the figure-ground structure elicited by *Gestalt* Psychology⁵⁶ —, that participates by its very movement in the *information* and modulation of the visual experience of the image. Hence, the performativity of the virtual image describes a structure in which we can no longer assign categories of activity or passivity to one of the terms involved, that is the image and its experiencer, since they are in an imminent reversibility.⁵⁷

⁵² For a discussion of the notion of interactivity see Lev Manovich, *The Language of New Media* (Cambridge, MA: MIT Press, 2002), pp. 70–74.

⁵³ For an account of the performing power of images as regards traditional and contemporary picture theories see Chiara Cappelletto, 'The Performing Image, or How the Visual Dimension is Enacted by Pictures', in *Transvisuality: The Cultural Dimension of Visuality: Boundaries and Creative Openings*, ed. by Tore Kristensen, Anders Michelsen and Frauke Wiegand (Liverpool: Liverpool University Press, 2013), pp. 59–74.

⁵⁴ See *Dictionnaire du Moyen Français*: <<https://apps.atilf.fr/lecteurFEW/lire/152/184>> [accessed 28 January 2019].

⁵⁵ Leon Battista Alberti, *On Painting: A New Translation and Critical Edition* (Cambridge University Press: Cambridge, 2013).

⁵⁶ See for instance Kurt Koffka, *Principles of Gestalt Psychology* (London: Routledge, 1935).

⁵⁷ Merleau-Ponty, *The Visible and the Invisible*, p. 147.