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→ Altered states

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4

Introduction:
the image between presence and absence

by Giancarlo Grossi & Andrea Pinotti

17

Between the mind and the senses: Jean Mitry's
approach to cinematic consciousness.

Toward an idea of the virtual image

in the cinema (I)

by Barbara Grespi

37

Screening the human mind:
a Deleuzian approach

to altered states

of consciousness in cinema

history. Toward an idea of the
virtual image in the cinema (II)

by Giuseppe Previtali

51

The fixed image in cinema as a potential
altered vision strategy

by Luca Acquarelli

69

Images that we should
not see. The issue

of non-perceptual attitudes
from film to virtual reality

by Enrico Terrone

91

On the altered states
of machine vision.

Trevor Paglen, Hito Steyerl,

Grégory Chatonsky

by Antonio Somaini

112

Perception, hallucination, virtual reality. From controlled
hallucination to Resident Evil 7: Biohazard

by Claudio Paolucci

129

Cinematic darkness: dreaming across film
and immersive digital media

by Martine Beugnet and Lily Hibberd

154

The hallucinatory aspect of virtual reality
and the image as a "Bilderschrift"

by Pietro Montani

Contents

Introduction: the image between presence and absence¹



Giancarlo Grossi and Andrea Pinotti

Altered states Hallucination Immersive media Filmic representation

Dream

A visual history of alteration

Dream images, anticipations of the future, memories of the past, perceptual distortions, delusional hallucinations, cognitions intoxicated by alcohol and drugs have always inhabited the visual representations of paintings, comics, films, television series, videogames and, more recently, virtual reality installations. We call them “altered states of consciousness”, meaning any perceptual state other than ordinary human perception.²

When they are expressed in a visual form, we see a material picture which represents a mental image.³ While a picture is completely experienced by the senses, mental imagery is ordinarily conceived of as a quasi-perceptual

To quote this essay: G. Grossi and A. Pinotti, “Introduction: the image between presence and absence”, *AN-ICON. Studies in Environmental Images*, no. 1 (2022): 4-16

1 This essay is the result of research activity developed within the frame of the project *AN-ICON. An-Iconology: History, Theory, and Practices of Environmental Images*. AN-ICON has received funding from the European Research Council (ERC) under the European Union’s Horizon 2020 research and innovation program (grant agreement No. [834033 AN-ICON]), and is hosted by the Department of Philosophy “Piero Martinetti” of the University of Milan into the project “Dipartimenti di Eccellenza 2018-2022” attributed by Ministero dell’Istruzione, Università e Ricerca (MIUR).

2 For a rigorous psychological definition of the concept of “altered state of consciousness”, embracing mental states occurring in sleep, meditation, hypnosis or while using drugs, see Ch.T. Tart, *Altered States of Consciousness* (Garden City NY: Doubleday, 1972).

3 The distinction between the materiality, objectivity and prevalent visual character of the image intended as picture and the immateriality, subjectivity and multisensorial aspect of the mental image is perfectly explained by W.J.T. Mitchell in “What is an Image?”, *New Literary History* 15, no. 3 (1984): 503-537.

experience that occurs in the absence of external stimuli.⁴ What makes these pictures recognizable to us as such? We cannot, in fact, compare them with the reality of the mental image, which we know only in the first person, trapped in the secret of individual experience. And yet, it seems that the visual has always elaborated strategies, codes, and arrangements to ensure that, within a visual narrative, an image is interpreted as absent, because it is present in a mental space or as a perception of an altered state of consciousness.

These representations are historically and culturally determined, depending on the way a mental image is conceived in each era and geographical context. The French historian Yannick Ripa, for example, has distinguished an “ancien régime du rêve”, in which the dream is thought of as an external and metaphysical entity from the modern conception that leads it back to the universe of an inner subjectivity.⁵

At the same time, the medium that delivers these mental visions also contributes to differentiating cultural codes and shared representations that shape them. In Füssli’s *The Nightmare* (1781) or in Goya’s *El sueño de la razón produce monstruos* (1797), the oneiric emerges from a juxtaposition of the sleeping body with its nightmares, co-present in the same visual box. Differently, comics such as Winsor McCay’s *Dreams of a Rarebit Fiend* (1904-1913) and *Little Nemo in Slumberland* (1905-1927), represent altered states and especially dreaming in a visual regime that combines simultaneity and succession.⁶ The result is a progressive escalation of bizarreness that can only be interrupted by the last vignette, when the dreamer usually falls off the bed.

Cinema, ever since Méliès, has used particular fades such as cross-dissolves to signal the passage from physical to mental presence, be it in memory, imagination,

4 A. Richardson, *Mental Imagery* (London: Routledge, 1969).

5 Y. Ripa, *Histoire du rêve. Regards sur l’imaginaire des Français au 19e siècle* (Paris: Olivier Orban, 1988).

6 T. Gunning, “The art of succession: reading, writing, and watching comics”, *Critical Inquiry* 40, no. 3 (2014): 36-51.

or dream. Another peculiar case is given by the extreme instability of the camera with which the alterations caused by indigestion, drunkenness, and drug consumption are rendered since early movies. Jean Epstein's comparison between alcohol and cinema is thus significant to define the multiform, fluid, and malleable perception of the universe introduced by the medium.⁷

However, none of these codes is fixed: cultural contexts and historical fractures introduce radical differences within each mediascape, and the same happens if we consider processes such as hybridization, convergence, and remediation of the different media. Nevertheless, a dreamlike or hallucinatory image remains immediately recognizable to many viewers. It is a representation that indicates its absence rather than its presence.

The altered states of film theory

The way in which cinema not only records objective reality but also visualizes mental processes has always been one of the most hotly-debated questions in film theory. In 1916, Hugo Münsterberg's important essay *The Photoplay. A Psychological Study* laid the foundations of the question: the cinematic image is never merely objective, since the movement and depth that the spectator perceives in the film do not exist in themselves, but are the product of the cooperation of the images with the spectator's mental activity.⁸ Moreover, in the film a series of techniques externalizes and makes materially visible on the screen certain mental processes: attention is recreated by the zoom and the close-up; memory is expressed through the use of flashbacks; imagination, conceived as the capacity to anticipate future events, is portrayed through what contemporary film grammar would call flashforwards. The relationship between film and mind thus appears analogical, based

7 J. Epstein, "Alcool et cinéma" (1949), in S. Keller, J.N. Paul, eds., *Jean Epstein: Critical Essays and New Translations* (Amsterdam: Amsterdam University Press, 2012): 395-404.

8 H. Münsterberg, *The Film: A Psychological Study* (1916) (New York City: Dover Publications, 1970).

on the similarity of the respective cognitive processes.⁹ A further peculiarity recognized by Münsterberg is that of visualizing what the characters “see in their own minds”,¹⁰ images belonging to memory and dreams whose transition is reported by “soft-focus images, lighting variations, superimpositions”.¹¹

In the same wake, in his famous essay devoted to *Style and Medium in the Motion Pictures* (1934), also Erwin Panofsky remarked that “the movies have the power, entirely denied to the theater, to convey psychological experiences by directly projecting their content to the screen, substituting, as it were, the eye of the beholder for the consciousness of the character”.¹²

The metonymic and metaphoric relationship between film and mind – to use Christian Metz’s semiological terminology –¹³ are the basis of the aesthetic specificity of cinema, which succeeds in materializing mental operations with greater effectiveness than the previous arts. Sergej Eisenstein’s intellectual montage, with its adherence to thought faculties such as analogies and oppositions, enhances this hallucinatory and oneiric power of the movie. It is no accident that in his *Non-indifferent Nature* (1945-1947) the Soviet director and theorist analyzes mental visualization techniques such as those used in Loyola’s spiritual exercises being interested in the artistic achievement of ecstasy and pathos.¹⁴

In many theories cinema takes on the characteristics of a mind objectified in material images and sounds: a magical double of the self-produced by processes of

9 N. Carroll, “Film/mind analogies: The case of Hugo Münsterberg”, *Journal for Aesthetics and Criticism* 46, no. 4 (1988): 489-499.

10 J. Moure, “The cinema as art of the mind: Hugo Münsterberg, first theorist of subjectivity in film”, in D. Chateau, ed., *Subjectivity: Filmic Representation and the Spectator’s Experience* (Amsterdam: Amsterdam University Press, 2011): 23-40, 39.

11 Ibid.

12 E. Panofsky, “Style and medium in the motion pictures” (1934), in *Three Essays on Style* (Cambridge MA: The Mit Press, 1995): 98.

13 Ch. Metz, “Metaphor/metonymy, or the imaginary referent”, *Camera Obscura: Feminism, Culture, and Media Studies* 3, no. 1 (1981): 42-65. See also L. Williams, “Dream rhetoric and film rhetoric: metaphor and metonymy in *Un chien andalou*”, *Semiotica* 33, no. 1-2 (1981): 87-103.

14 S. Eisenstein, *Non-indifferent Nature* (1945-1947), trans. H. Marshall (Cambridge-New York City: Cambridge University Press, 1987): 171. See also M. Lefebvre, “Eisenstein, rhetoric and imaginicity: towards a revolutionary memoria”, *Screen* 41, no. 4 (2000): 349-368.

identification and projection for Edgar Morin among others;¹⁵ a brain endowed with perceptions, actions, and affections according to Gilles Deleuze;¹⁶ a narcissistic regression analogous to dreaming in the perspective of Jean-Louis Baudry and Christian Metz.¹⁷ Metz in particular underlines some radical differences between cinema and that particular form of mental image constituted by the dream: the awareness of being at the cinema versus the unawareness of dreaming; the impression of reality of the film versus the illusion of reality of nocturnal visions; the real exteriority of images and sounds perceived in the cinema versus the interiority of the “hallucinatory psychosis of desire”; the logical consistency of the film versus the bizarre discontinuity of dream images. Yet a profound analogy remains in the half-way states of both cinema and dream: when spectators are so engrossed that they interact with the characters on the screen and gesticulate like sleepwalkers, or when, thanks to the activation of defensive attention, the dream becomes more lucid and conscious.

Returning to the problem of the representation of altered states of consciousness, it is necessary to consider how this has a history that is linked to the evolution of the moving image. In Gilles Deleuze’s cine-philosophy, for example, it is clear that the emergence of an image capable of questioning the subjective/objective distinction is linked to the emergence of modern cinema. In this historical context, in fact, a radical disorganization of the action-image takes place, with a prevalence of a pure optic-auditory sensation over its motor extension and narrative actualization. In this way, recollection-images, mental visualizations, hallucinations, and dreams take on a new centrality, in the form of virtualities that remain suspended and non-actualized,

15 E. Morin, *The cinema, or the Imaginary Man* (1956), trans. L. Mortimer (Minneapolis MI: University of Minnesota Press, 2005).

16 G. Deleuze, *Cinema 1. The Movement-Image* (1983), trans. H. Tomlinson, B. Habberjam (Minneapolis MI: University of Minnesota Press, 1986); Id., *Cinema 2. The Time Image* (1985), trans. H. Tomlinson, R. Galeta (Minneapolis MI: University of Minnesota Press, 1989).

17 J.-L. Baudry, “Ideological effects of the basic cinematographic apparatus” (1970), trans. A. Williams, *Film Quarterly* 28, no. 2 (1974): 39-47; Id., “The Apparatus” (1975), trans. B. Augst, *Camera Obscura*, no. 1 (1976): 104-126; Ch. Metz, *The Imaginary Signifier: Psychoanalysis and the Cinema* (1977), trans. C. Britton et al. (Bloomington IN: Indiana University Press, 1982).

typical of a crystal-image in which temporalities are reflected simultaneously.¹⁸ Thus the dream-image assumes a particular centrality. Following Henri Bergson and his famous discussion on dreams, Deleuze refers to the panoramic character of dream-images, which is also typical of near-death experiences in which the whole of life suddenly appears before one's eyes.¹⁹ What is created is a weak link between the optical or auditory sensations and this panoramic view of the whole. There are in fact two procedures common to the dream-image of cinema:

One proceeds by rich and overloaded means [...] dissolves, superimpositions, deframings, complex camera movements, special effects, manipulations in the laboratory [...]. The other, on the contrary, is very restrained, working by clear cuts or montage-cut, making progress simply through a perpetual unhinging which "looks like" dream, but between objects that remain concrete.²⁰

Both recollection-images (flashbacks) and dream-images are virtual, but in different forms. The recollection-images are actualized past events, while the dream-images are rooted in an image that refers itself to another virtual time, thus activating an infinite path of references. The result is a motor process very different from the concreteness of action, which is described by Deleuze following a conceptual apparatus taken from Ludwig Binswanger, as a movement of the world, "the fact of being inhaled by the world".²¹ This is a virtuality and immersivity of the image which cinema proposes in its representations, but which the new digital media we know today have the power to realize at a technical level, with the user's perception absorbed and enveloped by the virtual image.

The recollection-image and the flashback have also been the subject of further theoretical investigation

18 A. Powell, *Deleuze, Altered States and Film* (Edinburgh: Edinburgh University Press, 2007).

19 Deleuze, *Cinema 2*: 55-67.

20 *Ibid.*: 58.

21 *Ibid.*: 291.

since Deleuze. One example is Maureen Turim's work,²² in which the flashback is considered as a structural device of film that is fundamental for understanding the non-linear development of film history itself. This process is particularly visible in the comparison between the representation of memories in melodrama and that presented by modernist cinema. At the same time, in the flashback emerges the strategy through which cinema represents the intersection between the individual dimension of memory and the socio-political dimension of history.

More recent approaches to the relationship between cinema and altered states of consciousness see the medium as a technological extension of a mind-body plexus to be rediscovered, above all, starting from the media-archaeological investigation of 19th century sciences of the mind. This is in fact the episteme that witnesses the emergence of the cinematic experience. Along these lines, we can quote the genetic relationship between hypnosis and cinema identified by Ruggero Eugeni,²³ Stefan Andriopoulos,²⁴ and Raymond Bellour;²⁵ the investigation into the relationship between cinema and hysteria proposed by Rae Beth Gordon,²⁶ Emmanuelle André,²⁷ and Mireille Berton;²⁸ and the link between the psychological mapping of gesture and the rise of the cinematic apparatus theorized by Pasi Valiaho.²⁹

22 M. Turim, *Flashbacks in Film: Memory & History* (London: Routledge, 1989). For a discussion on the relationship between the time of new media devices and the time represented within them, see G. Stewart, *Framed Time. Towards a Postfilmic Cinema* (Chicago-London: University of Chicago Press, 2007).

23 R. Eugeni, *La relazione d'incanto. Studi su cinema e ipnosi* (Milan: Vita & Pensiero, 2002).

24 S. Andriopoulos, *Possessed: Hypnotic Crimes, Corporate Fiction, and the Invention of Cinema* (Chicago-London: University of Chicago Press, 2008).

25 R. Bellour, *Les corps du cinéma: hypnose, émotions, animalités* (Paris: P.O.L., 2009).

26 R.B. Gordon, *Why the French Love Jerry Lewis: From Cabaret to Early Cinema* (Stanford: Stanford University Press, 2001).

27 E. André, *Le choc du sujet. De l'hystérie au cinéma (XIXe-XXIe siècle)* (Rennes: Presses Universitaires de Rennes, 2011).

28 M. Berton, *Les corps nerveux des spectateurs. Cinéma et sciences du psychisme de 1900* (Lausanne: L'Âge d'Homme, 2015).

29 P. Valiaho, *Mapping the Moving Image. Gesture, Thought, and Cinema circa 1900* (Amsterdam: Amsterdam University Press, 2010).

From hallucination to virtual realities

In all these theoretical perspectives it becomes evident how cinema, by representing altered states of consciousness, often reflects on its own affinity with dreams and hallucination. More precisely, on its identity as a materialization of mental visualization processes. Ken Russell's film *Altered States* (1980), which also gives the title to this monographic issue of *AN-ICON. Studies in Environmental Images*, can be considered paradigmatic in this regard. In this film, the psychiatrist Edward Jessup (William Hurt), loosely based on the real-life figure of the neuroscientist John Lilly, carries out a series of experiments with the help of an isolation tank and the ingestion of hallucinogenic mushrooms. His aim is to understand at first hand the subjective experience of schizophrenic patients, achieving a hallucinatory and dream-like perception that belongs to primitive mental states. The film echoes a number of ideas related to the redefinition of consciousness typical of 1970s-80s counterculture. Julian Jaynes's essay *The Origin of Consciousness in the Breakdown of the Bicameral Mind* (1976) is an example of these theories.³⁰ In this book, the subjective perception of schizophrenia is presented as an activation of an evolutionary state prior to the emergence of consciousness, the "bicameral mind", in which the right hemisphere of the brain was allocated the function of communicating through visual and verbal hallucinations, and the left hemisphere had the task of obeying and executing.

The film plays on two visual registers: one in the third person, that of the scientific community observing the experiment, and one in the first person, where the subjective hallucinations of the protagonist emerge in fragments. The hallucination is thus presented as a repeatable experiment, through the insertion of the body in a device suitable for the production and reproduction of altered states. But what kind of medium does this device really resemble? The

30 J. Jaynes, *The Origin of Consciousness in the Breakdown of the Bicameral Mind* (1976) (Boston MA: Houghton Mifflin, 2000).

body is immersed in water which, being at the same temperature as the body, cancels all sensory perception and, with it, all distinctions between inside and outside, tactile and external input. In this radical absence of the world, the mental image takes full shape, enveloping the person and becoming the only sensory horizon that can be perceived. Not only that: the mental image presents itself as a real space, and the effects of the hallucination seem to modify the user's own body (in the movie, transforming him into an Australopithecus). This hallucination represented in cinema takes us forward to another device, which, like a hallucination, does not allow any escape from the image, but a radical symbiosis with it. This is virtual reality.

In virtual reality, unlike cinema, it is not so easy to distinguish between objective and subjective shots. Firstly, because the virtual frame is always in some way subjective, since its source depends on the movements of the viewer's gaze to which it adheres, saturating the field of vision. Secondly, precisely because of the powerful sense of presence and feeling of being there produced by virtual reality, in immersive digital environments it becomes more difficult to represent the estrangement from actual perception that a previous medium like cinema obtained through cross-dissolves and other visual strategies. Is it therefore possible to portray altered states in immersive media? Can the tyranny of the sense of presence eliminate the images of absence, or do we just have to investigate new strategies of representation?

In fact, some virtual reality installations present themselves, directly, in the form of memories, dreams, hallucinations, mental visions. Examples are virtual reality experiences such as *Notes on Blindness: Into Darkness* (Arnaud Colinart, Amaury LaBurthe, Peter Middleton, James Spinney, 2016), in which the user can experience the inner perspective of the blind theologian John Hull; *The Key* (Céline Tricart, 2019), which portrays the dreams of an Iraqi migrant; *Porton Down* (Callum Cooper, 2019), in which the user becomes the guinea pig in hallucination tests performed using LSD; *Cosmos within Us* (Tupac Martir, 2019)

dedicated to the temporally and spatially unregulated perception of an Alzheimer's patient; finally, the mystical and lysergic journey of the Amazonian shamanic ritual reproduced in *Ayahuasca - Kosmik Journey* (Jan Kounen, 2019).

The present issue

These are problems that the first issue of *AN-ICON. Studies on Environmental Images* aims to investigate. A peculiar attention is devoted to the comparison between two media systems: an analogue system, dominated by the altered states of cinema, and a virtual one, where new experiential possibilities of virtual, augmented, and mixed reality emerge. The problem that runs through this comparison is essentially whether the possibility of presenting perceptively distorted states belongs more properly to the cinematic image, or whether it is still at the center of the new digital and immersive mediascape.

Barbara Grespi's and Giuseppe Previtali's contributions are directly related in their common purpose to search for a status of the virtual image in cinema in some nodal moments of film theory that interrogate the representation of mental states. Grespi's essay starts from Wim Wenders' *Until the End of the World* (1991) and from the capability of the imaginary device represented in the movie to exteriorize and prosthesize subjective experiences such as visions and dreams. The fictional medium, halfway between cinema and virtual reality, allows Grespi to reflect on the filmic access to mental states. This issue is investigated through the recovery of the first, but lesser-known, of the two volumes of *Esthétique et psychologie du cinéma* (1963-1965) by Jean Mitry. This is a pillar of film theory, analyzed by Grespi in its unacknowledged Husserlian roots. Thus, the technical and psychic concept of "projection", understood as a specific form of actualization, "an effect in which the perception of physical image intersects with mental envisioning", becomes especially central to introduce a

possible comparison between the cinematic forms of the visible and those that emerge in virtual experiences.

Cinematic altered states, however, undergo radical transformations in history: this is what Previtali's article discusses, drawing on Gilles Deleuze's theory of cinema and examining the differences between the movement-image of classical cinema, in which dreams and memories are also expressed as physical realities intertwined with the world, and the time-image of modern cinema, capable of adhering to the dynamics of thought. For Previtali, an example of this process is Ingmar Bergman's *Wild Strawberries* (1957), where recollection-images are not real flashbacks, but rather virtual mixtures of memory, imagination, and dream, as evidenced by the fact that the protagonist relives the past moments of his childhood and youth while remaining as old as he actually is in the present.

Still anchored to Bergman's cinema, Luca Acquarelli's investigation into the emergence of hallucination within the cinematic diegesis is grounded in the semiotic analysis of a further incursion: that of the photographic still image within the equidistant flow of the film's moving frames. This can be seen in Bergman's *Persona* (1966), but also in Michelangelo Antonioni's *Blow Up* (1966) and Chris Marker's *La Jetée* (1962), the latter consisting almost entirely of still images. In these moments a new balance is established between dream-states and the testimonial power of the image, seen through André Bazin's conception of photography as "true hallucination".

Enrico Terrone, in a different perspective, considers cinema in terms of a disembodied experience, organized in a space that has our sight but not our body as its own center. Because of this condition, cinema is able to approximate to non-perceptual attitudes such as memories and dreams, but not completely emulate them. On the contrary, this emulation would be a concrete possibility for virtual reality precisely thanks to its adherence to the gaze and body of the spectator coupled with a potential

for manipulation and alteration that it is impossible to find in another embodied experience such as that of theater.

But how are altered states expressed in the new immersive and digital mediascape? Is it possible in virtual reality to make a distinction between the representation of a real state from that of an exclusively mental state? First of all, we need to investigate how the digital radically transforms the very ideas of visual perception and image. This is evident in Antonio Somaini's contribution, devoted to new artificial intelligence technologies such as machine learning and machine vision. In fact, their non-human perceptual functions appear in some cases as altered states that produce dreamlike images, similar to those found in computer programs such as the one called, significantly, Google Deep Dream. Thus, it becomes necessary for Somaini to study the artistic practices that exploit the productive potential of machine learning in a creative and revolutionary way, such as in the artworks of Trevor Paglen, Hito Steyerl, and Grégory Chatonsky.

The perceptual dimension is also at the center of Claudio Paolucci's contribution. From the point of view of cognitive semiotics, Paolucci investigates the hallucinatory character of ordinary perception, always shaped by the intervention of imagination, to analyze the way mental states are represented in virtual and augmented environments. If perception can be defined in terms of a hallucination controlled by the world, what changes in immersive environments is only the simulated character of the world itself. The states of imagination, memory, and hallucination are then reproduced in virtual and augmented reality following two possible strategies: either in a pan-perceptual modality, exploiting the full sense of presence produced by the immersive devices, or following the audiovisual strategies inherited from previous audiovisual languages with which virtual and augmented reality share the same formal apparatus of enunciation. To exemplify this double expressive

possibility, Paolucci analyzes the immersive videogame *Resident Evil 7: Biohazard*.

At this point, it becomes necessary to understand what the specifically dreamlike and hallucinatory character of virtual reality consists of and how it differs from other established media. The joint paper written by film theorist Martine Beugnet and new media artist Lily Hibberd focuses on the role played by darkness, which in the new immersive media takes on a completely new potential compared to cinema. In fact, it becomes an intrinsic component of the environmentalized image of the former – coupled with the illusion of depth and the replication of motion. If the darkness of the traditional audiovisual distinguishes states of self and otherness, in virtual reality it envelops the users depriving them of the sense of distance and leading them back to a state of radical loss, in which they are haunted by sporadic sounds and visions, faithful to the dynamics more proper to memory and dream.

Pietro Montani's essay then becomes the effective conclusion and synthesis of all the questions raised by this issue. The dreamlike character of virtual reality consists for Montani in a precise work of oneiric imagination, capable of distancing itself from linguistic thought without getting trapped in a pure hallucination, but finding its proper status in what Freud defines as "Bilderschrift" (pictographic script), a syncretic relationship between images and writing functions, both pre-linguistic and performative, which can also be read in the Kantian terms of a schematization without concept. An expressive condition which resurfaces in early cinema and especially in Eisenstein's film theory of the 1920s and which today finds a specific declination in immersive virtual installations such as *Carne y Arena* (2017) by Alejandro Gonzalez Iñárritu and *VR_I* (2018) by choreographer Gilles Jobin, where different participants can share a collective lucid dream. In fact, new media do not merely represent altered states of consciousness: they take on their performative power.

Between the mind and the senses: Jean Mitry's approach to cinematic consciousness.

Toward an idea of the virtual image in the cinema (I)¹



by Barbara Grespi

Abstract

Representing altered states of consciousness, even through the most phantasmal of technical images, is an inherent contradiction; once we attribute a physical body, i.e. objectivity, to mental images, we deny what Husserl considers their very essence. Jean Mitry draws from this assumption when discussing filmic access to mental states from a phenomenological perspective. The following essay reconsiders Mitry's contribution with specific reference to the role of projection, technically and metaphorically speaking, in the cinematic technique and imagination; this, with the intention of suggesting some crucial questions for the comparison between the filmic forms of the visible and those inaugurated by the technology of the virtual.

[Mitry](#)

[Husserl](#)

[Mental state](#)

[Projection](#)

[Imagination](#)

To quote this essay: B. Grespi, "Between the mind and the senses: Jean Mitry's approach to cinematic consciousness. Toward an idea of the virtual image in the cinema (I)", *AN-ICON. Studies in Environmental Images*, no. 1 (2022): 17-36

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A silver visor, you would say an ancestor of a VR headset were it not for the cap that wraps around the lower part of the skull. It causes a sharp pain in the eyes and its function is not to watch images, but to record them, like an ordinary video camera. Nevertheless, it has no lens but two satin panels, one for each eye. From the outside, you can see the signal of a scanner running; from the inside, the captured images appear on two side-by-side screens. It is the device invented by Wim Wenders for *Until the End of the World* (*Bis ans Ende der Welt*, 1991) (Fig.1), in the story, a prototype which all the great world powers are hunting down in the fevered climate of the end of the millennium. Its camera captures the biochemical event of vision, that is, not only what you see but also how your brain reacts to the perceived images, collecting electrical stimuli directly from the nerves. The recorded “visual” impulses can thus be transmitted to the brain of another person, even a blind one, and this allows them to see without using the retina. Still, as the story progresses, the machine evolves into something even more complicated: a technique for extracting from the mind images which are completely independent of sight and correspond to pure imagination, dreams or memories. Sight translated into data gives birth to “artificial” images, segmented in a grid and the result of numbers; imagination, on the other hand, has pictorial qualities, strong colours and blurred borders. Sci-fi cinema provides a long list of vision machines, but Wenders’ possesses a special allure, balanced, as it is, between the old and the new.

2 Dr. Allendy [René Allendy], “La valeur psychologique de l’image”, in AA.VV., *L’art cinématographique* (Paris: Félix Alcan, 1926): 75-103, 77.



Fig. 1. Wim Wenders, *Until the End of the World* (*Bis ans Ende der Welt*), 1991. Screen capture.

Between cinema and VR: an exquisitely optical prosthesis, it creates abstract images, devoid of somatic and sensory traces, but at the same time it is a medium of intersubjectivity, which allows the exchange of visions at a neural level. It is a digital device, but also a truth machine: it records, documents, reflects even the unconscious, or the deepest levels of our psyche. It represents the cinema in its increasingly sharp juxtaposition to other technologies of the contemporary era, such as VR: the first in perpetual balance between body and mind, the second completely biased towards the sensory.

The representation of mental acts in cinema is always, as in Wenders' movie, a metafilmic moment in which the image consciousness is elaborated, together with the ways in which multiple factors, material and immaterial, contribute to it, including the gaze and its structure. In the following pages, by rediscovering Jean Mitry's reading of Husserl's thinking, we will discuss the role of projection, technically and metaphorically speaking, in filmic access to the mental; this with the intention of bringing out some crucial questions for the comparison between the cinematic forms of the visible and those inaugurated by the technology of the virtual.

The mental image and the filmic image

Beyond what they represent, filmic images are “situated” in a space halfway between the mental and the real: the iconic stream that the spectator sees flowing would not exist outside his or her mind, which integrates and merges the perception of the single frames thus creating the movie. Even before the birth of cinema, the paradoxical nature of the moving image struck William James, who referred to it to describe consciousness in terms of a zoetrope: just as that optical toy produces effects of continuity by making discontinuous fragments flow, so the consciousness merges its sequences of scattered and uninterrupted micro-perceptions into an illusory whole.³ The similarity between the film and the activity of the mind will be at the core of one of the first essays in film theory, *The Photoplay* by Hugo Münsterberg, a former student of medicine who converted to psychology under the influence of Wilhelm Wundt, and later became James’s colleague at Harvard.⁴ The reference to James’s metaphor of the zoetrope allows us to understand what Münsterberg meant by suggesting that photographic images had been estranged from physical reality once they had achieved movement – contrary to what one might naturally think – and were brought closer to the reality of consciousness.

The massive outer world has lost its weight, it has been freed from space, time, and causality, and it has been clothed in the forms of our own consciousness. The mind has triumphed over matter, and the pictures roll on with the ease of musical tones.⁵

Münsterberg develops a precise parallel between cinema and mind, seeing the main filmic techniques

3 “Is consciousness really discontinuous, incessantly interrupted and recommencing (from the psychologist’s point of view)? And does it only seem continuous to itself by an illusion analogous to that of the zoetrope? Or is it at most times as continuous outwardly as it inwardly seems?”. W. James, *The Principles of Psychology* (Create Space, 2017): 125.

4 M. Münsterberg, *Hugo Münsterberg: His Life and Work* (New York: Appleton & Co., 1922): 21-22.

5 H. Münsterberg, “The psychology of the photoplay” (1916), in A. Langdale, ed., *The Photoplay: A Psychological Study and Other Writings* (New York-London: Routledge, 2002): 153-154.

as reflecting the activities of consciousness, such as attention (corresponding to the close-up and the shifting from in-focus to out-of-focus), memory (represented by flashback as enclosure of the past in the present) and emotion (in its development, according to William James, from a kinesthetic sensation).⁶ This early conception of the mind as a movie justifies the most common visual rhetoric that complemented the representation of a character's mental acts: fading, superimposition, soft focus. Becoming consolidated precisely in the years in which Münsterberg wrote his essay, these optical effects aim at framing a segment of the visible within a zone which is not real and not certain, just as the discontinuous hyphens of the thinking bubbles in comics highlight the difference between a thought spoken out loud and one which remains unspoken in the character's mind. Transitions in classical cinema in essence produce the slow fading of the actual into the mental, evoking an idea of the mind as a place of weakening, intermingling and metamorphosing of sensory input.

These narrative fragments which interrupt the flow of the film by jumping onto a different level and moving beyond the diegetic physical reality, are thus presented and interpreted as the "contents" of a fictional consciousness; this implies believing that the human mind operates by storing impressions derived from perception in the shape of ghostly pictures to be inspected, when needed, by the mind's eye. We are familiar with this notion, its ancient roots and its points of junction with modern thinking,⁷ as well as its confutation by phenomenology, whose intake is crucial but still difficult to integrate into studies of the imagination.⁸ Even a thinker like Sartre who tries to get rid, precisely through Husserl, of the idea of the mind as a repository of images, was victim to the same "illusion of immanence" that

6 Münsterberg shares the Jamesian perspective (the famous: "we do not weep because we are sad, but we are sad because we weep"). H. Münsterberg, "The psychology of the photoplay": 107-108.

7 See the ancient idea of the mind as a room furnished with images in F.A. Yates, *The Art of Memory* (New York-London: Routledge, 1966).

8 See for instance J. Jansen, "Imagination: phenomenological approaches", in M. Kelly, ed., *Encyclopedia of Aesthetics* (Oxford: Oxford University Press, 2014): 430-434.

he intended to criticize once he admitted the existence of a “psychic object” (the *analogon*) and presented it as the mediator of the imaginative process.⁹

Sartre is very much present in *Esthétique et psychologie du cinéma* by Jean Mitry, the massive treatise in two volumes written by the French critic, activist and director between 1963 and 1965,¹⁰ a work capable of bridging, as Dudley Andrew wrote, the formalism of classical theory with emerging semiotics.¹¹

The second volume, centered on form and cinematic language, is the best known and most appreciated, while volume one, particularly eclectic, has suffered from an evident removal, also highlighted by the significant cuts made in current French and English editions.¹² Here we find the first remarkable confrontation of film theory with Husserl, an attempt recognized by the pioneers of the phenomenological approach to cinema, but never investigated, and even dismissed, in the numerous developments of this branch of study.¹³ Mitry discusses precisely the theme of *mental images*, which Husserl brought together under the umbrella term of *Phantasie*, to indicate both the ensemble of images devoid of physical support and the act of imagination through which they “appear” (*erscheinen*).¹⁴ It is an act of imagination that which gives shape to a physical image, deposited on a support and capable of

9 Casey recognized the error. See E.S. Casey, “Sartre on imagination”, in P.A. Schilpp, ed., *The Philosophy of Jean-Paul Sartre* (La Salle: Open Court 1981): 16-27.

10 J. Mitry, *Esthétique et psychologie du cinéma* (vol. I: *Le structure*, and vol. II: *Les formes*) (Paris: Editions Universitaires, 1963, 1965). A useful rediscovery of Mitry’s contribution to film theory in: M. Lefebvre, “Revisiting Mitry’s *Esthétique et Psychologie du Cinéma* at Fifty”, *Mise au point* [online], no. 6 (2014), accessed February 20, 2021.

11 See D. Andrew, *The Major Film Theories: An Introduction* (Oxford: Oxford University Press, 1976): 181ff.

12 The current English edition *The Aesthetics and Psychology of the Cinema* (Bloomington: Indiana University Press, 1997) was translated from the abridged French edition of 1990. We will quote from this book, unless otherwise specified.

13 Vivian Sobchack recognizes his engagement in a Husserlian phenomenology of cinema – see her *The Address of the Eye: A Phenomenology of Film Experience* (Princeton: Princeton University Press, 1992): 29 – while A. Casebier, *Film and Phenomenology: Toward a Realist Theory of Cinematic Representation* (Cambridge-New York: Cambridge University Press, 1991) prefers to lean upon Baudry. Christian Ferencz-Flatz and Julian Hanich dismiss Mitry’s idea of mental image as a distortion of the phenomenological arguments. See their stimulating introduction “What is film phenomenology?” to “Film and phenomenology”, *Studia Phaenomenologica* XVI (2016): 36.

14 E. Husserl, *Phantasy, Image Consciousness, and Memory (1898–1925)* (Dordrecht: Springer, 2005).

depicting an absent entity (*Bildvorstellung*), as well as that which creates mental images (*Phantasievorstellung*), which are by no means comparable to “iconic contents” of the consciousness, but rather to be understood as intuitions based on “sensorial phantasms”.¹⁵ Mitry does not refer to these precise pages of Husserl, whose essential theses are however echoed, but rather he remodels phenomenology under the influence of his experience of the cinema. *Esthétique et psychologie du cinéma* stems indeed from a general philosophical position – a unique case in film theory, if we exclude Deleuze’s two tomes – a thesis in which it is of primary importance to define the role of perception by mediating among Husserl’s theses, Sartre and psychology.

In Mitry’s interpretation of intentionality, perception is an act based on sensory impressions but is not reduced to them; consciousness completes them, by extracting an object from the undifferentiated continuum that constitutes matter and hence giving form, by difference, also to the subject. Consciousness is based on mental images, which are not residues of ocular perception which have survived in the absence of the object, and nor are they entities existing in themselves and of which thought could avail itself; they are rather forms through which thought became aware of itself. With this idea, Mitry gets rid of the metaphor of consciousness as a receptacle of data and substitutes it with that of consciousness as a *reflex* of perception. With perception in the absence of the object, that is *Phantasie*, the glare of consciousness is, so to speak, one-way: “the mental image is the product of a wish directed toward the object which we know to be absent [...] it is the consciousness of that wish becoming ‘known’ in the object of its volition”.¹⁶

15 In Husserl called precisely “*Phantasmen*”. In the comment on Husserl’s theory of imagination, we follow C. Cali, “Husserl and the phenomenological description of imagery: some issues for the cognitive sciences?”, *Arhe* 4, no. 10 (2006): 25-36 and *Husserl e l’immagine* (Palermo: Aesthetica Preprint, 2002): 113-114.

16 J. Mitry, *The Aesthetics and Psychology of the Cinema*: 35-36.

The moving image consciousness

Mitry's starting point, therefore, is not the cinematic representation of consciousness, but the mental images that become part of the imaginative process; this process is extremely important in cinema, a medium which powerfully simulates the real but at the same time possesses a deep-rooted ghostly nature. According to Mitry, this double character of cinema is reflected by the two kinds of signs of which it is composed: linguistic and psychological signs; linguistic signs give shape to the filmic images (through a grammar of the visible), psychological signs construct mental images (with the collaboration of the spectator).

To understand how these two "signs" intersect in the beholder's experience, it is necessary to come back to Husserl and his well-known tripartition regarding *image consciousness*, which is not clearly referenced in *Esthétique et psychologie du cinéma*, but still recognisable in many lines. Husserl's classification is based on three perceptive dimensions: the first is the "image-thing" (*Bildding*), that is, the concrete material of which the image is made, its support; the second is the "image-object" (*Bildobjekt*), that is, the immaterial object which depicts something (the *ideal* content of a series of perception);¹⁷ the last is the "image-subject" (*Bildsujet*), that is, the depicted subject (the referent in the real world).¹⁸ A subtle but substantial difference separates the image-thing from the image-object: if the support were damaged or destroyed (for instance, if a canvas was torn), the image-object would not be affected, because it does not possess a real existence, neither inside nor outside of consciousness (only a *complex of sensations experienced by the spectator* in front of the pigments exists, as well as the way in which he invests it with intentionality, by creating image consciousness). This component is more easily understood in the case of the mental image, which

17 In Mitry's words, see J. Mitry, *The Aesthetics and Psychology of the Cinema*: 27.

18 I use this expression, although I am aware that between the image and the subject there is not properly a semiotic relationship. See C. Rozzoni, *Nell'immagine: Realtà, fantasia, esperienza estetica* (Milan: Le Monnier, 2017): 9.

lacks a material support, in contrast to the physical image. Still, there is a minor difference between the two, because what matters is their common capacity of *actualizing absent objects* (that is to say, making them present). The illusion of presence is based on the production of *sensorial phantasms* that allow us to guess how an object would be if it fell under the sphere of our senses, for instance touch or hearing, but first and foremost sight.¹⁹ An “optical” phantasm makes us intuit how a specific object would appear to our gaze within a particular environment, and this imaginative act covers our perception, albeit not totally. Indeed, the mental image as well as the physical image insert themselves into the perception in a *contrastive* way, that is, not fully covering and substituting our reality, but allowing us to keep it alive. It is not a question of greater or lesser illusionistic power (some images could appear so real to be mistaken for reality), and neither of frames (a more or less marked discontinuity in the space where they are situated), rather it is a matter of time: Husserl points out that this is more the contrast between the time of the image-object and the actual present,²⁰ to which our body belongs above all (but also the *Bildding*, if we are talking about physical images). Here below, the echo of these concepts in Mitry:

We have seen that the mental image presents a reality both visualized and recognized as absent. If, as I write these lines, I think of my car in the garage, I can see it perfectly well, mentally – or, at least, I can see a certain aspect of it – but I am seeing it as not present. It appears to my consciousness as an image certifying the absence of what I am thinking about – more especially since,

19 This is what was brightly called an “artificial presence”. See L. Wiesing, *Artificial Presence: Philosophical Studies in Image Theory* (Stanford: Stanford University Press, 2010).

20 “[The image-thing] bears within itself the characteristic of unreality, of conflict with the actual present. The perception of the surroundings, the perception in which the actual present becomes constituted for us, continues on through the frame and then signifies ‘printed paper’ or ‘painted canvas’”. E. Husserl, *Phantasy, Image Consciousness, and Memory (1898–1925)*: 51 (emphasis in the original). On this base, I suspect that we should abandon the optical idea of the frame when we face an environmental image (like VR), and rethink it in corporeal terms, considering the spectator’s real body as the border; indeed, you always have the possibility to leave the artificially present world not by *seeing* outside of the image, but certainly by *touching* the surrounding space and objects (or people), that is, paradoxically, becoming aware of the unreal in the very moment in which we get the chance to *imagine* the real *through* our body (thus in a perfect inversion of the cinematic relationship between reality and imagination).

in so doing, I do not stop perceiving the world impinging on me from all sides. The *mental image is therefore a product of the will standing in opposition to our normal perception of the world and its objects and which, though coexisting with it, becomes more isolated the more directly in opposition it stands.*²¹

Mitry realises that these ideas are of great importance for the analysis of cinematic images, which had also attracted Husserl's attention, albeit fleetingly. The great philosopher's reflections about the art of the twenty-century concern the repeatability of cinematic screenings such as to leave the image-object unaltered,²² and the intensity of the actualization produced by filmic images, so high as to reduce the perception of the image-thing to the minimum. "Deception and sensory illusion of the sort belonging to panorama images, cinematographic images, and the like", he wrote, "depend on the fact that the appearing objects in their whole appearing state are slightly or imperceptibly different from the objects appearing in normal perception. One can know in these cases that these are mere image objects, though one cannot vitally sense this".²³ His germinal reflection on cinema has been taken up by some important contributions, mainly centered on the relationship between consciousness and true believing and on the interplay between actor and character;²⁴ but the path indicated by Mitry is just as interesting and perhaps more in line with Husserl's suggestions. Mitry wrote:

Stuck to a cellulose base, projected onto a screen [...] the film image, in contrast with the mental image, is objectively present; but, like the mental image, it is the image of an absent reality, a past reality of which it is merely the image. Its concrete reality is that it is

21 J. Mitry, *The Aesthetics and Psychology of the Cinema*: 82-83.

22 "If I let a cinematographic presentation run off repeatedly, then (in relation to the subject) the image object in the How of its modes of appearance and each of these modes of appearance itself is given as identically the same image object or as identically the same mode of appearance". E. Husserl, *Phantasy, Image Consciousness, and Memory (1898-1925)*: 646.

23 E. Husserl, *Phantasy, Image Consciousness, and Memory (1898-1925)*: 146.

24 See C. Rozzoni, "Cinema Consciousness: Elements of a Husserlian Approach to Film Image", *Studia Phaenomenologica*, XVI (2016): 294-324; J. Brough, "Showing and Seeing: Film as Phenomenology", in J. D. Parry, ed., *Art and Phenomenology* (New York-London: Routledge, 2010): 192-214.

fixed to a support and is thus objectively present and analyzable. The reality recorded on the celluloid strip is at all times capable of being projected. In this sense, projection is a kind of “actualization” in the same way as the mental image.²⁵

In these lines, a central question arises: in cinema, the act of making something present (“actualization”, he writes, alluding specifically to Husserl) takes place in the very moment of projection, because the strip of film is only a “latent movie”; according to Mitry, the celluloid is the main support (the image-thing), while the screen unbalances perception *from the thing to the object*, allowing movement to be seen. Neither the destruction of the film, nor even a scratch in the screen cancels the object-film, which, as we said, is that ideal content which, though created during the projection, survives it – as Orson Welles’ *Don Quixote* never ceases to teach us, a foolish spectator who stabs the white screen with his sword in an attempt to heroically oppose his enemies of light and shadow. Welles shows that the screen is not the canvas, is not one and the same with the image, which resists its destruction, both because it is anchored to another, more real support, and because it lives in the mind, paradigmatically in that of the visionary Don Quixote. The celluloid is more similar to the concrete materials of the painter, so much so that the director selects carefully its size and sensitivity, while he can do nothing with the surface of the screen. But if we look back at the origins, we find the two supports imploded into each other: in pre-cinema, frame and screen coincide, because the illusion of movement, for instance in Mutoscope, depends on the flow of photographs bound one on top of the other, within the screen format created by their borders: the “book”.

Do we have thus a double “thingness” in the filmic image? And if so, is it not a fundamental property of all technical images,²⁶ even in the many variants

25 J. Mitry, *The Aesthetics and Psychology of the Cinema*: 31, 83.

26 This is perhaps another way to interpret the idea of technical images as proposed by V. Flusser, *Into the Universe of Technical Images* (1985) (Minneapolis: University of Minnesota Press, 2011).

of the analogue, but also digital system? The material cinematic film behaves like photosensitive paper in photography, or data code in the digital system, while the shadows projected on the screen correspond to the photographic positive, and to the extraction of the mpeg file on the display. From photography onwards,²⁷ to codify an image and to visualize it, that is to render it accessible to the human eye, became two different and not necessarily concurrent processes; obviously, with the transition to digital, the gap between the two moments widens, because there the matrix is no more a first, far-fetched or incomplete visualization of the subject, but its translation into a numerical language, not accessible to the senses, and thus potentially shared only by machines.²⁸ But the point is: to develop a theory of cinematic image anchored to the process of *visualization* instead of that of encoding – focusing at the same time on the spectator because, as Münsterberg said, without him the image in motion simply does not exist – we have to work on the intersection between the physical and the mental.

By a different route, Tom Gunning drew similar conclusions, when he re-launched the theory of realism moving from Metz's brief incursion into phenomenological territory;²⁹ Gunning is not a supporter of the deviation toward the mental, but certainly an adversary of Peirce's indexicality when used to reduce the impression of reality in cinema to the sole photographic base. Thomas Elsaesser, on the other hand, is not a phenomenologist but he rediscovered the "mental side" of cinema when he drew the distinction between the transmission of the image to the human senses and its recording through traces, rather than optical geometry. Indeed, he saw the model of this process in the human memory, as Freud had conceived it (that is like a Mystic Writing Pad), and proposed to re-start

27 But not in its daguerreotype version, which did not use the positive-negative reverse process: the metal film plate in the camera was developed as a positive and as a unique copy.

28 On this topic see: F. Casetti, A. Pinotti, "Post-cinema ecology", in D. Chateau, J. Moure, eds., *Post-cinema: Cinema in the Post Art Era* (Amsterdam: Amsterdam University Press, 2020): 193-218.

29 C. Metz, "On the impression of reality in the cinema", in *Film Language: A Semiotics of the Cinema* (New York: Oxford University Press, 1974): 3-28, discussed by T. Gunning, "Moving away from the index: cinema and the impression of reality", *differences* 18, no. 1 (2007): 29-52.

the theoretical discourse about cinema from its nature of interface between data and the human senses, in the key of an archaeology of the digital.³⁰

These excellent contributions are perfectly in tune with Mitry's emphasis on projection as a Husserlian moment of *actualization*, an effect in which the perception of physical image intersects with mental envisioning; in it "the film frame merely takes the place of the mental image with all the force of its credible reality".³¹ Moreover, Metz quoted by Gunning builds on Mitry in his analysis of the "filmic mode", which he defines "the mode of presence",³² thinking not of a state of sensory overwhelming, but of an active consciousness made up of the mental reflexes of perception. Nevertheless, the mental, though it is a reflex and a logic of the images, is precisely what the film could never make visible. "It is completely impossible to represent a mental image", Mitry wrote, "since, having become visual, it ceases to be mental".³³

The filmic image is helpless in the face of what is not accessible to the sight or at least what no one has ever seen; for this reason, Mitry would probably have appreciated the frameless film by Douglas Gordon (*Feature Film*, 1999), a video installation that basically consists of an orchestra performing the full soundtrack written by composer Bernard Hermann for the film *Vertigo* (Alfred Hitchcock, 1958). On the two walls of the exhibition room, only the conductor appears in large mirror projections. However, the real images filling the room are not the physical ones on the walls, but those which flow in the viewer's mind in correspondence with the musical notes: the sequence where Kim Novak jumps into the bay under San Francisco's Golden Gate Bridge, or when she comes back in her green suit like a ghost. The spectator experiences a kind of vision

30 T. Elsaesser, "Freud as media theorist: mystic writing pads and the matter of memory", *Screen* 50, no. 1 (2009): 100-113. Kuntzel already worked on the similarities between Freudian model of memory and the cinema, see: T. Kuntzel, "A note upon the filmic apparatus", *Quarterly Review of Film Studies*, no. 1 (1976): 266-271.

31 J. Mitry, *The Aesthetics and Psychology of the Cinema*: 86.

32 C. Metz, "On the impression of reality in the cinema": 4.

33 J. Mitry, *The Aesthetics and Psychology of the Cinema*: 209.

not based on retina, as the director himself reports, referring to interviews with spectators coming out of the gallery: *Vertigo* is projected through the ears into the mind of the person listening to Hermann's notes.

States of mind and self projection

Are we to think, then, that only the absence of images triggers imagination? And if it is totally impossible to simulate the mental with the means of cinema, how shall we construe the numerous attempts, since the origins of the medium, to simulate altered states of consciousness? Mitry argues that dream sequences, hallucinations and premonitions are not the most mental but the most subjective,³⁴ and in this he joins Wenders, whose machine will show that the mental could be translated into the visible only by sharing subjectivity. Therefore, the result of the cinematic simulation of altered states depends on the ways in which the movie makes the viewer slip into the consciousness of a character, articulating his or her seeing and feeling through the "subjective shot".

Film theory has always juxtaposed two forms of the cinematic gaze: the so-called *objective shot*, corresponding to the simulation of a world that is completely independent from every perception, be this human, animal or belonging to other living and non-living species, and the *subjective shot*, the simulation of a perceived world, thus filtered at a sensorial and cognitive level through a specific fictional identity. The analysis of these two modes, together with other more nuanced ones, are part of the glorious problem of the point of view in the cinema, a protagonist of the semiotic-narratological debate of the Eighties and Nineties, also discussed towards the end of the season in Vivian Sobchack's phenomenology, which takes up precisely Mitry's contribution. The chapters about the point of view in *Esthétique et psychologie du cinéma* are indeed the best known and most discussed, even if, before

34 Ibid.

Sobchack, perhaps not fully understood. Sobchack's *The Address of the Eye: A Phenomenology of Film Experience* (1992), was published only a year after Metz's *Impersonal Enunciation, or the Place of Film* (1991),³⁵ and thus criticizes the positions of the great semiologist, especially Metz reading Mitry;³⁶ but in reality, *Impersonal Enunciation* is a point of encounter between the two authors.

Mitry is among the first to study in depth *The Lady in the Lake* (Robert Montgomery, 1946), the film noir shot almost entirely in subjective mode. Here we spectators investigate in the shoes of the detective Philip Marlowe, who is framed frontally only at the beginning and at the end of the movie, while for the rest his eyes are our eyes and our body is disguised in his. Mitry knows how to wonderfully describe the way in which the spectators' gaze follows the character's gait from the inside, striving to consider his feet as their own, or the way in which they hold onto the railing with him, trying to see their own hands in Marlowe's. But this attempt fails. They cannot recognize the image of their own body. Rather they imagine themselves accompanying the body of an Other, *objectified*, as all the rest is.

It is obviously not me climbing the stairs and acting like this, even though I am feeling sensations similar to those I might feel if I were climbing the stairs. I am, therefore, walking with someone, sharing his impressions.³⁷

Then when the famous sequence of the mirror arrives, during which the face of Marlowe is reflected (always from the character's view), spectators are slightly disappointed, Mitry apparently suggests. They have to admit that the impressions that they tried to embody were not theirs. Or rather: this is true for all the viewers except for the director, because he, Robert Montgomery, played Marlowe; thus, for him, and for him only, the subjective shot

35 C. Metz, *Impersonal Enunciation, or the Place of Film* (New York: Columbia University Press, 2016).

36 C. Metz, "Problèmes actuels de théorie du cinéma" (1967), in *Essais sur la signification au cinéma*, 2 vol. (Paris: Klincksieck, 1972): 35-86.

37 J. Mitry, *The Aesthetics and Psychology of the Cinema*: 210.

works. Put another way, in the subjective shots, Montgomery would experience himself as another, by again embodying the sensorial phantasms of his previous experience; most of the time, he would live through an experience of partial mirroring: proprioceptive but not optical.³⁸

Sobchack addresses this analysis on two levels. On one level, she expands Mitry's critique by adding the argument of the difficulties of simulating a proprioceptive act. It is not just a matter of noticing the difference between the spectator's hands and the actor's, but also the fact of being forced to perceive differently from the way in which the character would probably do so in reality. Indeed, the subjective shots serve two simultaneous purposes: they show the clues necessary to solve the mystery and at the same time they show Marlowe's perception in a believable fashion. However, the fictional Marlowe would be interested only in the inquiries, and not in his percipient self; for this reason, Sobchack speaks of a difference in the *intentional focus* that detaches the viewer from the character. In addition, our way of directing attention consists in moving our eyes inside a visual field in which everything remains equally sharp, even what we are not focusing on; on the contrary, classical cinema deploys a marked in-focus and out-of-focus procedure, it constructs clear and blurred zones of visibility by regulating the focal point. So, the analogy between cinema and mind in Münsterberg's theory (movie techniques as metaphors of the processes of attention), becomes for Sobchack an element which unmasks the difference between man and machine. This is indeed the second and more radical level on which Sobchack's line of argument is based, and it is so important that it overturns, at least formally, Mitry's reasoning.

Building on a Merleau-Pontyan version of phenomenology, Sobchack challenged the semiotic distinction between subjective and objective gaze and introduced the

38 I suggest something similar to the inspiring idea of the shot/counter-shot relationship in terms of specular reflection without a mirror, as proposed by A.C. Dalmasso, "Le plan subjectif réversible: Sur le point de vue au cinéma à partir des écrits de Merleau-Ponty", *Studia Phaenomenologica*, XVI (2016): 135-162.

concept of the *film's body*, meaning “an intentional instrument able to perceive and express perception”.³⁹ From this standpoint, the film's materially nonhuman (but percipient) body presents the world *subjectively* to the spectator's eye. Consequently, the movie camera sees a character and sees him/her seeing with the same degree of subjectivity (its own). It can disguise itself totally as them, by attributing to them a temporary responsibility for the visible perception, but not without a great effort.⁴⁰ This is indeed the true unbridgeable difference between bodies in the subjective structure of the gaze: not between the body of the spectator and the body of the character, but between the machine's body (“the non-human embodied film”) and the actor's, and even more so, the spectator's body. On the surface, we are dealing with an inversion of perspective, but in reality, it is a convergence: the film's gaze overwrites that of the character whether we define the machine as an object (but always from a phenomenological perspective: Mitry), or as a subject (a sentient body: Sobchack).

In the years between Mitry's volume and Sobchack's, the supporters of the subjective gaze proliferated, with some epochal contributions;⁴¹ but when Metz closes that chapter with his *Impersonal Enunciation*, we come back, in a sense, to the beginning. Metz comes from his book on cinema and psychoanalysis, where he differentiated a form of primary identification (with the camera) from a secondary one (with the character), so he is already inclined to elaborate on the reflexive role of the apparatus. But *Impersonal Enunciation* starts by arguing, exactly as Sobchack does, that the “semi-subjective shot” discovered by Mitry – an over-the-shoulder shot directed along an axis which more or less aligns with the character's point of view – is the best form of subjectivity; firstly, because it also shows, even if partially, the body of the perceiver, a necessary

39 V. Sobchack, *The Address of the Eye*: 247.

40 *Ibid.*: 231.

41 See the still indispensable F. Casetti, *Inside the Gaze: The Fiction Film and Its Spectator* (1986) (Bloomington: Indiana University Press, 1998).

factor to encourage identification,⁴² and secondly, because it makes you sense the presence of a second gaze that perceives the percipient. In conclusion, even leaving phenomenology and remaining in the sphere of semiotics, the point is this: the subjective shot is not an empty mould for the spectator's gaze and body, it is rather a place for redoubling: it "performs above all a *double doubling* of the enunciative moment [...] it doubles *at a stroke* the site [*foyer*] that shows via him, and the spectator, who sees via him [...] subjective image is reflexive but not a mirror. It does not reflect itself; rather, it reflects the source and the spectator".⁴³

From this standpoint, the subjective shot becomes a reproduction *en abyme* of the projection: we could probably rethink also the idea of the *first person shot* in VR (and XR) along this line; there the beholder's body-gaze, apparently implied at every level, is rather to be construed in its radical coincidence with the machine of visibility.

In conclusion, when we talk about subjectivity in the image, we talk about a reflexive form in which the movie *makes itself visible*⁴⁴ (through the character's eye or through other stylistic strategies and non-human bodies, so-called "enunciating entities"). Still, exploiting a fictional identity not to access the physical world but some form of *Phantasie*, to re-use a Husserlian word, means to introduce a further enunciative level in which the character, unquestionably, mediates the visible with its Self, that is to say, its own human and fictional subjectivity. This is what Mitry meant, probably, when he maintained that mental images plead the cause not so much of the mental but of subjectivity.

However, movies about people with supernatural faculties offer a range of fictional representations of mental states more in tune with this idea of "impersonal subjectivity"; in those cases, indeed, the character's altered states

42 Mitry argued first that to adopt a gaze, one must have seen the body of this gaze; see the development of this idea in E. Branigan, *Point of View in the Cinema: A Theory of Narration and Subjectivity in Classical Film* (Amsterdam-New York-Berlin: Mouton, 1984).

43 C. Metz, *Impersonal Enunciation, or The Place of Film*: 106.

44 Unless you think of the distribution of knowledge and the positioning of the narrator towards the diegetic universe (Genette's focalization).

are not to be explained through psychology, but through their function as human machines of vision (symmetrical to Sobchack's cinematic machine as non-human body).



Fig. 2. David Cronenberg, *The Dead Zone*, 1983. Screen capture.

In *The Dead Zone* (David Cronenberg, 1983) (Fig. 2), the visions of John, who awakens from a coma lasting nearly five years, traverse his body and materialize around him. There is a physical support (an *image-thing*) where the “data” of the events that John is able to “hallucinate” are stored, and it is the body of the person who experienced them: each vision is generated by the contact between John's hand and that of the subject, whose past or future is in question; the handshake produces tremors, signals travelling through the clairvoyant's body and reaching his eyes, which at this point “project”⁴⁵ the images (*images-objects*) into the environment, and not without pain (the same consumption suffered by the protagonists of *Until the End of the World*). John becomes a visitor to these virtual spaces, which he experiences with his body, while the spectators experience his hallucination as their own not by virtue of an unconditioned adhesion of gazes (the subjective shot), but rather by virtue of a plurality of subjectivisations

45 See the idea of *divination as projection* in one of the figures who inspired Jean Mitry's thinking, known as Dr. Allendy: “The fortune tellers [...] do nothing but project on reality something which doesn't possess in itself any determination, a latent image that is inscribed in it — and therefore we can understand all the *techniques of divination as projection on reality* of an inner and obscure sense” (our translation and emphasis). See Dr. Allendy [René Allendy], “La valeur psychologique de l'image”: 99-100.

which renders the visible a place for the emergence of the gaze.⁴⁶ In his first vision, John hallucinates the fire in which the daughter of his nurse could die: the hospital room is transformed into the child's bedroom, including John's bed, suddenly surrounded by toys, teddy bears and flames. The vision is subjectified in a complex and multiple fashion: a rightward gaze opens the imaginary field with a classic subjective shot, and a leftward gaze brings the field back to reality; however, between the two gestures, the camera starts to wander in a mental space-time until it includes John, whose eyes have ceased to bear the sight of the images, while his voice remained altered as it is in his state of hallucination. In the most memorable of the visions, which concerns the young victim of a serial killer, John's subjective shot projects the imaginary gazebo in which the murder took place; but his close-up was already "subjectified" before his visions, because his face no longer immersed in the darkness of the night (the actual present), but surrounded by a diffused glow, the one that was there at the moment of the crime (the virtual past); this abrupt change of illumination intimates that John is already part of his hallucination. His entrance into the virtual world, his artificial presence on the scene of the crime, right behind the victim, but invisible, is a quintessential cinematic scene. John ends up in the image almost accidentally: a dolly starts moving slowly and brings into the frame his figure, almost by chance; it is thanks to a slightly excessive movement that we can see our vision together with its source. And it is precisely this *ghostly, casual and plural presence* that characterizes the cinematic experience; it is difficult to think that it could be replicated in immersive media, like VR, where there is, at least for the moment, no possibility of detaching the spectator's gaze from the "projector".

46 See the idea of "plan subjective réversible" and of the film as a "visible surface cracked by different gazes" from the Merleau-Pontyan perspective adopted by A.C. Dalmasso, "Le plan subjectif réversible": 140 (our translation).

Screening the human mind: A Deleuzian approach to altered states of consciousness in cinema history. Toward an idea of the virtual image in the cinema (II)



by Giuseppe Previtali

Abstract

From its very origins, cinema has demonstrated a particular interest in the representation of altered states of consciousness: memories, visions, nightmares and dreams are a common feature of narrative films and usually interrupt a flow of events by inserting different temporalities in the present of the story. Following the arguments explored by Gilles Deleuze in his groundbreaking works on cinema, this essay will address the issue of how narrative cinema has represented altered states of consciousness. If in early cinema of attractions altered states were represented as physical realities intertwined with the world, classical Hollywood films progressively exorcised the disruptive potential of such images by defining a visual grammar in order to normalize them within the narrative. It will be modern cinema which will focus on this issue in depth, given its new interest in the link between the moving image and the mechanisms of thought. In this regard, the essay will in conclusion address the hallucinations experienced by Isak Borg in Bergman's *Wild Strawberries*, a complex and highly illuminating case of various forms of altered mental states.

[Deleuze](#)

[Cinema](#)

[Temporality](#)

[Hallucination](#)

[Bergman](#)

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Alfred Hitchcock's *Stage Fright* (1950) begins with a shot of a young couple (Jonathan and Eve) in a car. We immediately understand that they are running from the police and they are heading towards a dock. The girl asks the man (who we will later recognize as her boyfriend) what happened and, when Jonathan starts to tell his story ("I was in my kitchen, it was about 5:00") the close-up shot of the two begins to fade out. He explains that earlier in the morning he had received a visit from the singer and actress Charlotte Inwood, who showed up at his house with a dress covered in the blood of her husband. Jonathan managed to sneak into Charlotte's house but was glimpsed by the housemaid and forced to run away. He later received a visit from two policemen, from whom he was able to escape only thanks to Eve. The description of this long sequence, which corresponds to the first fifteen minutes of the movie, would be incomplete without stressing the fact that Jonathan's tale will prove to be a lie, despite the fact that visually it adopts those criteria of clarity, legibility and transparency which were typical of classic Hollywood cinema and in which the spectator usually put his trust.

The exceptionality of this sequence and its exemplarity in showing how the temporal dimension (the sequence is a recollection of a supposed past) and the mental dimension (it is a *false* recollection of a certain character) are linked, is such that Deleuze identifies in it the first appearance of the mental image in the history of cinema. This crucial analysis, programmatically located in the last pages of *The Movement-Image*, explicitly connects the distorted evocation of the past and an altered state of consciousness. It is precisely this relationship which, questioning the omniscience of the spectator, heralds the advent of a new kind of filmic image:

The mental image not only frames the others, but transforms them by penetrating them. For this reason, one might say that Hitchcock accomplishes and brings to completion the whole of the cinema by pursuing the movement-image to its limits.¹

Altered states of consciousness in early and classical cinema

Deleuze's arguments, which will later be discussed more extensively, attempt to address the exceptionality of Hitchcock's movies in the context of classical narrative cinema. However, it is important to recognize that from its origins, cinema has continuously sought to make visible altered states of consciousness. If film theory immediately stressed the role of visual media in preserving the memory of what is absent (thus "presentifying" it),² another of the great obsessions of cinema has to do with "the aspiration to visualize what dwells in the human mind, to represent thought, to exteriorize what is internal".³ As Dagrada acutely pointed out, this urge was not limited to cinema itself, but was rather a common feature in the visual culture of the 18th and 19th centuries. Theatre, magic lantern shows and optical toys were just some of the most common examples of this interest shown in the visual externalization of mental states. Cinema, nevertheless, played a crucial role in this sense, given its specific ability to visualize reality. Long before the institutionalization of classical filmic syntax, early cinema developed a specific way of visualizing mental states. What is peculiar to this historical

1 G. Deleuze, *Cinema 1. The Movement-Image* (Minneapolis: University of Minnesota Press, 1986): 204. The use of Deleuzian concepts in film studies is an established trend and this paper follows this tradition addressing a perhaps slightly different problem. For a general understanding of this theoretical link, see: P. Pisters, *The Matrix of Visual Culture. Working with Deleuze in Film Theory* (Stanford: Stanford University Press, 2003); P. Maratti, *Gilles Deleuze. Cinema and Philosophy* (Baltimore: John Hopkins University Press, 2008); D. Angelucci, *Deleuze e i concetti del cinema* (Macerata: Quodlibet, 2012); D. Martin-Jones, W. Brown eds., *Deleuze and Film* (Edinburgh: Edinburgh University Press, 2012).

2 I am referring to the fundamental remarks by theoreticians such as A. Bazin, "The ontology of photographic image", in Id., *What is Cinema? Vol. 1* (Berkeley: University of California Press, 204): 9-16 and R. Barthes, *Camera Lucida* (New York: Hill and Wang, 1981): 96. Moreover, see the relevant passages in A. Boschi, *Teorie del cinema. Il periodo classico 1915-1945* (Rome: Carocci, 1998).

3 E. Dagrada, *Between the Eye and the World. The Emergence of the Point-of-View Shot* (Brussels: Peter Lang, 2014): 193.

period is that those states were not presented as individual and abstract perceptions, but rather as phantasmagorical apparitions, as forms of visual attraction.⁴ Hallucinations, forms of altered perceptions,⁵ apparitions of demons and other creatures were extremely common in early cinema, to such an extent that it is often difficult to differentiate clearly between these various types of altered consciousness. Besides the different ways in which these images are visually presented in early cinema,⁶ what needs to be stressed here is the fact that these forms of alteration possessed a “physical nature”, a “potential interchangeability with the real”.⁷ Consider for instance the case of *Histoire d'un crime* (Ferdinand Zecca, 1901). The film begins with the killing of a bank employee by a burglar and is built on the juxtaposition of self-contained *tableaux*, in accordance with the stylistic conventions of the time. When the burglar is arrested and taken to prison, we see him sleep; here, thanks to an explicitly theatrical solution, Zecca is able to visualize what is at the same time both a dream and a recollection of key events of the character's life. This form of *mise en abyme*, which has more or less the same function as thought balloons in comics,⁸ is typical of the period. It confirms that, while the linguistic status of these “altered images” was still unclear, early cinema already stressed the problematic and still to be analyzed relationship between the mental and the temporal dimension.

4 I use the term in the sense outlined in the influential study by T. Gunning, “The cinema of attractions: early film, its spectator and the avant-garde”, in W. Strauven, ed., *The Cinema of Attractions Reloaded*, (Amsterdam: Amsterdam University Press, 2006): 381-388.

5 Consider for example the hallucinatory drunkenness represented in *Rêve à la lune* (1905) or the nightmarish consequences of the main character's dinner in *Dream of a Rarebit Fiend* (1906).

6 For an inventory of these techniques, see E. Dagrada, *Between the Eye and the World. The Emergence of the Point-of-View Shot*: 197-210.

7 E. Dagrada, *Between the Eye and the World. The Emergence of the Point-of-View Shot*: 198. Later on, the concept is further emphasized as follows: “The objective physical quality forcefully inscribed into the continuity between subjective oneiric space and waking space characterizes all forms of representation of dreams developed by early cinema. It is not surprising, then, that in this context [...] mixing the objective and the subjective, oneiric representation simultaneously assumes both the material characteristics of a physical apparition and the supernatural characteristics of a clairvoyance, as if it constituted a magical way of communicating with somewhere else, a place that is just as real, but also supernatural”, *ibid.*: 205. Even if here the author speaks explicitly of dreams, her argument seems to be applicable to all the types of altered consciousness explored by early cinema.

8 L. Albano, *Lo schermo dei sogni. Chiavi psicoanalitiche del cinema* (Venice: Marsilio, 2004): 93. If not otherwise stated, the translations of Italian texts are always the author's.

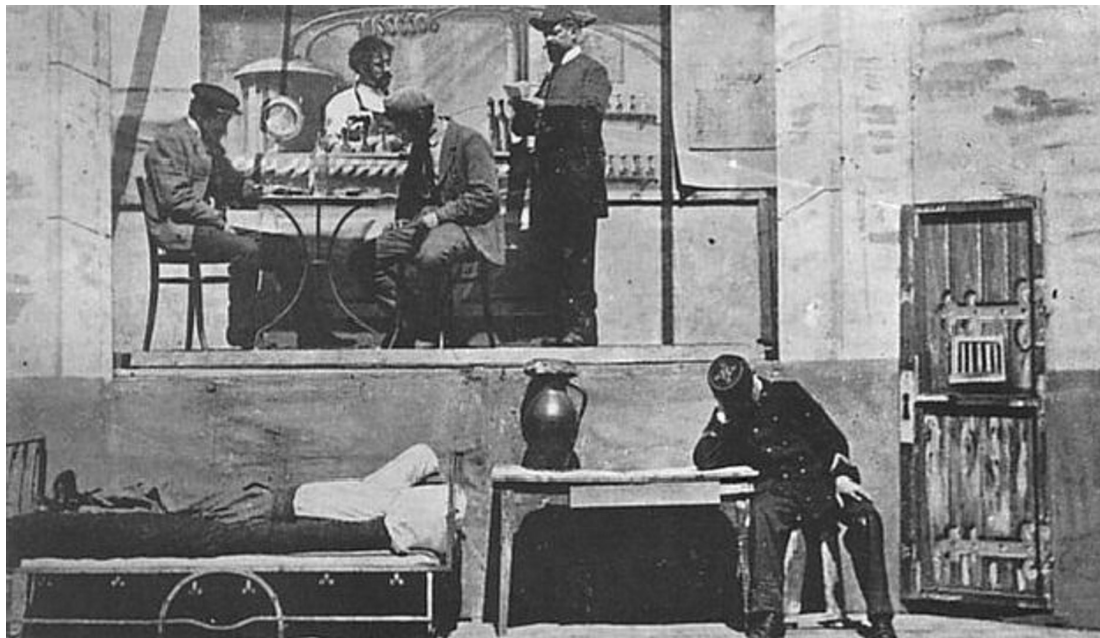


Fig. 1. Ferdinand Zecca, *Histoire d'un crime*, 1901

With the institutionalization of the film industry and its language, the various manifestations of the mental in early cinema were progressively neutralized and reduced to figures of altered temporality.⁹ The variety of mental states encountered in the cinema of attractions, and the different stylistic devices used to present them, were replaced by recurrent and recognizable linguistic elements which neutralized the subversive potential of mental images in a context in which a clear and coherent narrative was required.¹⁰ The case of *A Letter to Three Wives* (Joseph L. Mankiewicz, 1949) is emblematic in this sense. The protagonists of this sentimental drama are three women who receive, from a fourth woman, a letter stating that one of their husbands has run away with her. Haunted by doubt, each of the three gives rise to a flashback in which she remembers a specific episode of her life. The second flashback, which has as its protagonist Rita (a radio writer married to a modest but proudly intellectual teacher), is highly instructive

9 I am specifically referring to the flashback as a form of visualization of the past. On the various types of flashback, see at least: Y. Mouren, *Le flash-back* (Armand Colin: Paris, 2005); F. Centola, *Il flashback nel cinema. Il tempo riavvolto nell'eterno presente cinematografico* (Novara: UTET, 2019). For a theoretical and historical introduction to the topic, M. Turim, *Flashbacks in Film: Memory & History* (London-New York: Routledge, 2013). On the role of flashback in literary theory see the quintessential study by G. Genette, *Figures III* (Paris: Seuil, 1972).
 10 It should be noted that, according to many theoreticians such as Balázs and Bluestone, the only temporality of narrative cinema is the present. On this topic, S. Ghislotti, *Film Time. Le dimensioni temporali della visione* (Bergamo: Bergamo University Press, 2012): 54-63.

of the way in which classical cinema connects the mental and the temporal dimensions. Rita is laid on the grass, and while the camera delicately zooms in on her face, we hear her thoughts in voiceover (she obsessively repeats a couple of troubling questions: “Why couldn’t George go fishing? Why the blue suit?”). Then, a crossfade marks the beginning of the flashback, a sequence that tells the story of a highly problematic and unhappy marriage. The long flashback will then be visually presented according to the conventions of classical narrative cinema: a set of objective shots connected through the use of linear and transparent montage.

Beyond Classicism: from Hitchcock to Resnais

When confronted with the ways in which classical cinema elaborated the theme of mental images – reducing them to forms of altered temporality – Hitchcock’s exceptionality becomes even more apparent. As already mentioned, Deleuze identifies the false flashback of *Stage Fright* as a crucial moment for overcoming the movement-image. Indeed, the falseness of this sequence radically challenges the idea that memories can be objectively visualized, without the deforming effect always implicit in subjectivity. Even more problematically, in the final sequence of *Marnie* (1964), Hitchcock shows the emergence (or rather re-mergence) of a traumatic mental image of the protagonist, which she experiences not just optically but in a much more radically bodily sense. Influenced by the circumstances and as if hunted by a younger version of herself, Marnie actually re-experiences the dramatic events of her childhood. While being presented to the spectator through objective shots, these images – marked moreover by a chromatic alteration – have a material consistency for Marnie and she finds herself re-immersed in a past that she has already lived through. The discussion on the ways in which cinema reflected on the tension between the mental and the temporal dimension has shown that, while

in early cinema a variety of altered states of consciousness was represented as hallucinatory but “physical” realities, classical narrative cinema progressively institutionalized figures of temporality¹¹ within canonic filmic syntax.¹² The link between mental and temporal will become crucial in the context of so-called modern cinema,¹³ specifically because – according to Deleuze – in this cultural context cinema will finally be able to assign a central place to thought and its mechanisms: “the essence of cinema [...] has thought as its higher purpose, nothing but thought and its functioning”.¹⁴ This process will be made possible by the emergence of the category of mental image, which will on the one hand reassume and re-signify other kinds of images (such as the action-image) and on the other hand unleash the “modernist potential” inscribed in the flashback.¹⁵

The mental image is for Deleuze something profoundly related to the issue of time, but in an extremely complex and problematizing way which implies

11 More specifically, classical narrative cinema tried to visualize almost exclusively the past and it is probably no coincidence that Hitchcock was one of the few directors who tried to imagine an image in the future. I am referring here to the sequence of *Sabotage* (1936) in which the protagonist sees the water of a fish tank in the city aquarium dissolving and acting as a sort of screen on which is prefigured the brutal outcome of a bombing. It is worth noticing that in this case the future is considered as a time of pure possibility, because the imagined event will take place in a completely different way.

12 Deleuze insists on the rhetorical function of the flashback in a poignant passage of *The Time-Image*: “We know very well that the flashback is a conventional, extrinsic device: it is generally indicated by a dissolve-link, and the images that it introduces are often superimposed or meshed. It is like a sign with the words: ‘watch out! recollection’. It can, therefore, indicate, by convention, a causality which is psychological, but still analogous to a sensory-motor determinism, and, despite its circuits, only confirms the progression of a linear narration”. G. Deleuze, *Cinema 2. The Time-Image*, (Minneapolis: University of Minnesota Press, 1989): 48.

13 For a critical definition of this concept, see the still relevant remarks by G. de Vincenti, *Il concetto di modernità nel cinema* (Parma: Pratiche, 2000): 11-24.

14 G. Deleuze, *The Time-Image*: 168.

15 M. Turim, *Flashbacks in Film: Memory & History*: 189. On the same issue, Ghislotti points out: “While in the classical flashback the scenes became part of the coherent narrative of the movie, that is of a set of knowledges that helped the public to have a trustworthy idea of the story, in the case of modernist flashback this aspect falls short: the flashback often becomes the subjective vision of a fact, and is consequently a possible version of the events, but not the definitive one [...]. At the end of the film, the public is unable to have an idea of the story free of doubt and is forced to choose between this or that version of it”. S. Ghislotti, *Film Time. Le dimensioni temporali della visione*: 130-131.

the coexistence of different temporalities.¹⁶ In modern cinema, the visualization of mental states is made possible by the collision of /clash of /conflict of different temporalities that not only coexist, but can merge to the point of becoming indistinguishable:

The images have to be present and past, *still present and already past*, at once and at the same time. [...] The past does not follow the present that it is no longer, *it coexists with the present it was*.¹⁷

Take for instance a movie such as *Mirror* (Andrei Tarkovsky, 1975), in which the continuous oscillation between various states of consciousness (from memory to dream and beyond) would be inconceivable in the context of classical narrative cinema, especially when we consider that in the movie “there is a constant retroactive reverberation of almost every scene”.¹⁸ The memorial act of the protagonist Aleksej generates a flux of memory and visions that will involve not just his own life but also the life of his son and even collective and historical memory (both in an allusive form and through the insertion of historical visual documents).¹⁹ In this sense, *Mirror* seems to fully resonate with the Deleuzian idea of time as a topological construct, a field composed of peaks and sheets which continuously involve each other and are freely explorable. This idea becomes even more explicit when we consider the cinema of Alain Resnais, in which both the association between

16 “There is no present which is not haunted by a past and a future, by a past which is not reducible to a former present, by a future which does not consist of a present to come. Simple succession affects the present which passes, but each present coexists with a past and a future without which it would not itself pass on. It is characteristic of cinema to seize this past and this future that coexist with the present image”. G. Deleuze, *The Time-Image*: 37 (emphasis added). The use of the term “haunted” is specifically interesting here and seems to foreshadow the arguments of J. Derrida, *Specters of Marx: The State of the Debt, the Work of Mourning and the New International* (London-New York: Routledge, 1994).

17 G. Deleuze, *The Time-Image*: 79 (emphasis added). Also, on this point: S. Shaw, *Film Consciousness. From Phenomenology to Deleuze* (Jefferson-London: McFarland&Company, 2008): 147.

18 S. Shaw, *Film Consciousness. From Phenomenology to Deleuze* : 94.

19 T. Masoni, P. Vecchi, *Andrei Tarkovskij* (Milan: Il Castoro, 1997): 72-74.

mental and temporal,²⁰ and the conflict between various temporalities are quintessential. In his movies, the temporal oscillations do not involve issues of narrative clarity – as in classical cinema – but are rather used to visualize contradictory mental states that are always on the verge of undecidability. As pointed out by Deleuze, it is pointless to discuss Resnais' cinema dissociating the issue of time from that of mental states:

It is not difficult to show that dreams and nightmares, fantasies, hypotheses and anticipations, all forms of the imaginary, are more important than flashbacks.²¹

It is possible to identify a trend in Resnais' cinema which, from *Hiroshima Mon Amour* (1959) to *Je t'aime, je t'aime* (1968) through *Last Year in Marienbad* (1961) and *Muriel* (1963), questions and problematizes the mental dimensions of perception and their link with temporality. Consider for instance the emblematic case of *Last Year in Marienbad*: the claim of the man to have met a woman the year before could have easily offered the chance for a chain of illustrative flashbacks. On the contrary, the baroque setting of the hotel in which the two characters meet triggers a series of obsessive repetitions, uncertain memories (whose are these memories? Are these facts real or just imagined?), while the continuous and uncanny immobility of the bodies generates “a space-time in which there is no before or after, past or present, here and elsewhere, real and imaginary”.²² The film is structured by the connection between ambiguous and confusing mental states, altered forms of experience that continuously merge with hallucination. Deleuze sums up the issue as follows, underlining

20 According to Ishaghpour, the great issue of Resnais' cinema is to understand “the way the mind functions”. Y. Ishaghpour, *D'une image à l'autre* (Paris: Gonthier, 1981): 182; quoted in G. Deleuze, *The Time-Image*: 121. Shortly after, Deleuze comes back to this argument, stressing that “Resnais is always saying that he is interested only in what happens in the brain, in cerebral mechanisms – monstrous, chaotic or creative mechanisms”, *Ibid.*: 125.

21 *Ibid.*: 122.

22 L. Albano, *Lo schermo dei sogni. Chiavi psicoanalitiche del cinema*: 113-114.

once again the inextricable interweaving of times and perceptions offered by the movie:

In *Last Year in Marienbad* it is X who knew A (so A does not remember or is lying), and it is A who does not know X (so X is mistaken or playing a trick on her). Ultimately, all the three characters correspond to three different presents, but in such a way as to complicate the inexplicable instead of throwing light on it; in such a way as to bring about its existence instead of suppressing it: when X lives in a present of past, A lives in a present of future, so that the difference exudes or assumes a present of present (the third, the husband), all implicated in each other.²³

The hallucination of Isak Borg

Even if Deleuze never discussed Ingmar Bergman directly in the pages of *The Time-Image*, his cinema seems to benefit from the aforementioned theorizations, especially if compared with the new possibilities provided by virtual reality in terms of immersivity. Indeed, the presence of altered mental states is recurrent in his movies, which continuously address the link between temporality and perception. Consider for instance the hallucinatory visions of *Persona* (1966) or the nightmares that haunt the painter Johan in *Hour of the Wolf* (1968). The explicitly meta-filmic opening of this movie,²⁴ as a matter of fact, seems to suggest that for Bergman cinema is defined precisely by its specific ability to visualize altered states of consciousness. This idea becomes even more explicit (especially in connection with time) in *Wild Strawberries* (1957), in which Bergman sets out what is probably his most acute reflection on the topic. As is well-known, the protagonist is the elderly bacteriologist Isak Borg, who is about to receive his doctorate. The night before the celebration he has a terrible nightmare and decides to travel to the event by car, together with his daughter-in-law Marianne. During the trip,

²³ G. Deleuze, *The Time-Image*: 101.

²⁴ While the initial credits are running, we see voices that we can unmistakably associate to a film set: “Quiet all! Rolling! Take! Camera... and begin!”.

Isak will experience a whole set of daydreams, hallucinations and visions which will shed a new light on his former way of life. At the end of the day, after the celebration of his career, something will be changed in him, and he will start to approach life with more joy and respect for those around him.

Wild Strawberries is a movie that reflects on memory and on the possible link between various temporalities and forms of perception; thus, the fact that it has almost no flashbacks is even more striking.²⁵ None of the sequences in which Isak experiences some altered form of consciousness can be considered flashbacks, since Isak physically takes part in them with his old man's body "almost as if he was observing the world to finally understand it".²⁶ This is true for the oneiric scene that opens the film but also for the quintessential sequence in which Isak – taking a break from the trip near the house where he used to spend the summer during his youth – has a strange and highly interesting experience. We see him sitting under a tree, watching in close-up the old and now abandoned house, while we hear his thoughts in voiceover:

Perhaps *I got a little sentimental* [...]. I don't know how it happened, but the day's clear reality dissolved into the *even clearer images of memory*, which appeared before my eyes *with the strength of a true stream of events*.²⁷

Then we see him in counter-shot and, through a crossfade, we see the old house regaining its former appearance. With a subsequent series of rapid crossfades we take part in what at first sight may be considered a flashback. Here, we see his beloved cousin Sara picking strawberries for her uncle. However, we immediately understand that what we are experiencing is not a flashback, for at least two different reasons. First of all, Isak takes part in this particular

25 The only real flashback in the film is in fact not experienced by Isak Borg but by his daughter-in-law, who confesses to the old professor an argument that she had with her husband about the child she is expecting.

26 P. Baldelli, *Cinema dell'ambiguità. Bergman e Antonioni* (Rome: Samonà e Savelli, 1969): 95.

27 Emphasis added.

“presentification” of the past with his elderly body and is able to move in this hallucinatory experience with a certain degree of freedom; secondly, the events that Isak is seeing are not his memories, because it is immediately clear that (as a young man) he never saw what he is experiencing now (Sara and Sigfrid flirting).



Fig. 2. Ingmar Bergman, *Wild Strawberries*, 1957

Albano rightly argued that we cannot conceptualize this important sequence in terms of a flashback:

*We may speak of rêverie éveillée, of daydream or — in German — of Tagtraum, of conscious fantasy. A reverie that shares with a dream [...] the sense of living [...] what is being dreamt.*²⁸

Isak knows very well that he is experiencing an impossible past, because he addresses his young and beautiful cousin in an unmistakable way: “Sara, it’s your cousin Isak. Well, I’ve become quite old, of course, so I don’t look the same. But you, you haven’t changed at all”.

28 L. Albano, *Lo schermo dei sogni. Chiavi psicoanalitiche del cinema*: 76. On this point, see also: R. Campari, *Film della memoria. Mondi perduti, ricordati e sognati* (Venice: Marsilio, 2005):16, 22-28.

In this passage, we are confronted with a configuration of temporalities that is far more complex of those addressed above: it is a sort of double temporality because the present of the old Isak overlaps with a past that is – moreover – nonfactual, but rather seeped in the perceptions, regrets and hopes of the young Isak. This conflictual combination of temporalities seems to resonate perfectly with a crucial passage by Metz:

Memory is in effect the only vision [...] that posits its object as *simultaneously real and imaginary*, that is, *real in the past and imaginary in the present*.²⁹

What Isak sees really happened, but the way in which he experiences it is hallucinatory and gives the spectator no reassurance about the fact that it happened *in that way*. It is worth noticing here that Deleuze actually theorized this kind of situation, even without referring to Bergman: “the present is the actual image *and its contemporaneous past is the virtual image*, the image in a mirror”.³⁰

Finally, it seems important to notice that, despite his being immersed in an altered perception in which he can more or less freely move, Isak has no possibility of interacting with it. He “stands before the theatre of his life as a spectator-voyeur, terribly attracted, morbidly intrigued, but never seen, in complete isolation”.³¹ Both the dialogue between Isak and Sara and the subsequent scene in which he hears her confessions after the family lunch are highly instructive in this regard. It is symptomatic, in this respect, that this long sequence ends precisely when Sara moves to the garden to meet with the Isak of the past. The perception of the old Isak grants him the possibility to experience a time that he never lived and probably only imagined but

29 C. Metz, *Impersonal Enunciation, or the Place of Film* (New York: Columbia University Press, 2016): 96 (emphasis added).

30 G. Deleuze, *The Time-Image*: 79 (emphasis added). It is worth noticing that the situation that Deleuze imagines (the simultaneous presence of past and present within a *mirror image*) is explicitly visualized in *Wild Strawberries*, during a subsequent passage in which the old Isak sees himself reflected in a mirror held by a young Sara.

31 L. Albano, “Il posto delle fragole”, in A. Costa ed., *Ingmar Bergman* (Venice: Marsilio, 2009): 77.

he is at the same time confronted with an insurmountable limit: he is precluded from every contact and any chance of interaction with this time that is not his own. Only in his present will he be given the chance to undo his mistakes, thanks to the apparition of a sort of double of the beloved Sara. The specific way in which Bergman approaches the representation of altered mental states, working on the dialectic between absence and presence, nostalgia and desire, seems to have more than one similarity with the contemporary form of immersivity promoted by various technological desire. In this sense, a wider archaeological account of the issue of virtuality should be developed, in order to establish a more complex theoretical framework to address this kind of images.

The fixed image in cinema as a potential altered vision strategy



by Luca Acquarelli

Abstract

The article intends to propose some analyses of a possible formal occurrence of “altered states” in cinema: the stopping of the flow of the cinematographic image in a still image. Through some theoretical references (Metz, Bazin, Lyotard, Deleuze, Bellour, Barthes, Montani) I will try to understand if this kind of formal occurrence can be constituted as a figure of the altered state. The relationship between cinema and photography will be particularly explored, starting with films such as Antonioni’s *Blow Up* and Bergman’s *Persona*. The hallucinatory effect will thus be discovered not as opposed to that of reality, but a dialectic will be constructed between the two.

[Still image](#)

[Photography](#)

[Hallucination](#)

[Antonioni](#)

[Bergman](#)

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Dream as “authentic” absurdity, photography as “true” hallucination

Like hallucinations, dreams are not the far end of the reality scale but rather share some of its features. Metz has argued that dream sequences are always barely credible in narrative films precisely because films struggle to represent the “authentic absurdity” of dreams. Indeed, dreams seem to combine the reality effect with a hallucinatory patina that film dynamics find hard to hold together. The most traditional enunciative shifts introducing the passage between “reality”’s diegesis and that of dreams, such as unfocused borders or images in black and white as opposed to colour, are indeed ineffective expedients for the purposes of rendering this “authentic absurdity”, this double binary between the authenticating effect, like perhaps realist photography, and the game of the absurd, that injection of perceptual intensity that undermines the reality principle.

Weaving a somewhat daring theoretical thread, this oxymoronic terminology does not seem to me to be very far removed from that used by one of realism’s most famous theorists – and therefore a very long way away from Metz – André Bazin who, speaking of the use of photography as a privileged surrealist technique, conceives of photography’s potential for creating “a true hallucination”. While the realist photography ontology has been widely criticised, less space has been given to this hallucinatory residue of photography, which occurs even when it seems to adhere to a realist aesthetic.

It should be stressed that the dream hypothesis introduced with Metz is at the heart of one of cinema’s theoretical paradigms. Without dwelling on all aspects of this dimension, it will be useful here to digress into the dream-cinema relationship before introducing certain analyses of this article’s central theme, namely the presence of the fixed, especially photographic, image within film, which immobilises its movement, as a possible instant of altered vision. Metz has thoroughly enquired into the epistemological

potential of the oneiric vision, through the Freudian prism. In *Psychoanalysis and Cinema. The Imaginary Signifier*,¹ condensation, displacement and secondary elaboration are the main processes of the oneiric “signifier” explored by this French theorist as tools for the interpretation of cinematographic language. For Metz, the image’s “affinity” with the unconscious and its oneiric imagination increases its exposure to these processes as compared to language, without the latter being immune to them. Elements of film grammar such as superimposition and cross-fading – the former being closer to displacement, the latter to condensation – are key examples of this affinity. These elements testify to a survival of the primary process that, for instance, tends to abolish the discontinuity between objects. These are emergencies, aberrations within a product of secondary elaboration, such as the narrative development of a film or the attempt to narrate a dream upon awakening, the latter being forced, at least partially, to favour narrative logic at the expense of the ambiguous and nebulous dimension of the primary process. *Entstellung*, the oneiric deformation caused by the power of unconscious impulses, has thus also become a theoretical paradigm for thinking in images of a sort of energy that is not played out in forms and accumulates in fragments and temporary disfiguration.

Although Freud wrote that “dreams hallucinate”,² the kinship between dreams and hallucinations is anything but close, starting from the fact that the former occurs in a sleeping state and the latter in waking state. Moments of transition between wakefulness and sleep are often the scene of phenomena testifying to the kinship between the form the two experiences take: so-called hypnagogic and hypnopompic hallucinations. This is not the place to go into this matter in depth, but we might say that these two dimensions, dreams and hallucinations, may be the two areas where the fixed image in cinema, as viewed in this article, tends to position itself in dialectical movement.

1 C. Metz, *Psychoanalysis and Cinema. The Imaginary Signifier* (London: Palgrave, 1982).

2 S. Freud, *The Interpretation of Dreams*, trans. J. Strachey (New York: Basic Books, 2010): 79.

A few case studies will give us a clearer understanding of the type of visual alterations we are talking about.

Stopping the cinematic flow: intermediality and a-cinema

The hypothesis discussed in this article is designed to examine whether there are other cinematic strategies capable of expressing visual alterity as regards narrating the flow of cinematic images – an alterity whose intensity borders on the hallucinatory – and, in particular, the alterity that is generated by the use of photography in cinema as a standstill in movement. The film theorist Raymond Bellour has, on several occasions, taken an interest in the interruption of movement in cinema, when it is, in various ways, inhabited by the photography *hantise*.

In one short essay, in particular, his aim is to promote an, as yet hypothetical, study, in Bellour's own words, whose interest is the "traitement de l'immobile dans cet art du mouvement qu'est le cinéma".³ Here this film theorist analyses these moments of arrested movement as privileged instants of fragmented time within a cinematic time conceived of as unitary: "des points de transcendance, avérés, reconduits à travers les ellipses, les décompositions, les immobilisations qui les traversent".⁴ Bellour's insistence on privileged movement is also a way of questioning the view that sees cinema as a system of reproduction of "whatever movement", of the "equidistant instant" chosen to give the effect of continuity. In Bellour's analysis, this change of rhythm is also linked to a change in film's narrative dimension. Following and taking up his analysis, this article's aim is to examine cases in which this immobility interrupting the flow of images is, in its various forms, bound up with a hallucinatory state, of a dreamlike or other nature.

3 R. Bellour, "L'interruption, l'instant", in R. Bellour, *L'Entre-Images: Photo. Cinéma. Vidéo* (Paris: Mimésis, 2020): 131.

4 Ibid.: 133.

A fixed camera on a long take where movement is reduced to a minimum can restore this effect of immobility rendered by the emergence of a *virtually* still image in a 24 frames-per-second flow. But in actual fact, as Deleuze explains so well with regard to Ozu's still lifes, this is a completely different frame of mind:

At the point where the cinematographic image most directly confronts the photo, it also becomes most radically distinct from it. Ozu's still lifes endure, have a duration, over ten seconds of the vase: this duration of the vase is precisely the representation of that which endures, through the succession of changing states.⁵

However, when photography's fixity interrupts the cinematic flow, what we are left with is an alternative configuration. As Roland Barthes pointed out in his famous *Camera Lucida*:

The cinema participates in this domestication of photography — at least the fictional cinema, precisely the one said to be the seventh art; a film can be mad by artifice, can present the cultural signs of madness, it is never mad by nature (by iconic status); it is always the very opposite of an hallucination; it is simply an illusion; its vision is oneiric, not ecmnesic.⁶

If this opposition between photography and cinema where hallucination is concerned may indeed seem too general, it seems to me that the French theorist sees a certain specificity in the still image in relation to the moving image.

In fact, this thought seems to be echoed in Barthes' article on obtuse meaning theorised from a few frames of Eisenstein's *Ivan the Terrible (I)* (1944). Barthes realises that the starting point in his analysis is the frame which, although all film originates from it, cinema itself seems

5 G. Deleuze, *Cinema 2: The Time-Image*, trans. H. Tomlinson, R. Galeta (Minneapolis: University of Minnesota Press, 1989): 17.

6 R. Barthes, *Camera Lucida: Reflections on Photography*, trans. R. Howard (New York: Hill and Wang, 1982).

to forget in the amnesia of its 24 images-per-second flow. Paradoxically, frames seem very different in nature from the film they are part of: the possibility to observe a film frame offers a totally different epistemology as compared to when it is lost in the flow of the movement of animation.⁷

In the 1970s, Jean-François Lyotard theorised “a-cinema”, namely a cinema which goes beyond the narrative discourse of diegesis and the normalised image that follows on from it. A-cinema is not intended to be a negation of cinema, but a dimension in which it is the power of the image which takes precedence over its form, giving rise to image “pyrotechnics”.⁸ This French philosopher refers to two ways of complying with the pyrotechnical requirement: immobility and excess movement. He examines John Avildsen’s film *Joe* (1970), comparing the only two scenes featuring this arrhythmia and bound up with the film’s deeper narrative, namely the impossibility of the father’s incest with his daughter:

Ces deux effets, l’un d’immobilisation, l’autre d’excès de mobilité, sont donc obtenus en dérogation des règles de représentation, qui exigent que le mouvement réel, imprimé à 24 images/seconde sur la pellicule, soit restitué à la projection à la même vitesse.⁹

One of the examples of immobilisation described by Lyotard – this paralysis in the image that provokes the most intense agitation – is most effectively embodied by the *tableau vivant*, linking this *dispositif* to the libidinal energy dimension that lies at the heart of his broader theory of the

7 Barthes adds: “For a long time, I have been intrigued by the phenomenon of being interested and even fascinated by photos from a film (outside a cinema, in the pages of *Cahiers du cinéma*) and of then losing everything of those photos (not just the captivation but the memory of the image) when once inside the viewing room – a change which can even result in a complete reversal of values”. R. Barthes, *Image, Music, Text* (London: Fontana Press, 1997): 65-66.

8 Lyotard takes the idea from Adorno who claimed that the only great art is that of the artificers: “la pyrotechnie simulerait à la perfection la consommation stérile des énergies de la jouissance” and then talking about currents that could meet pyrotechnic needs: “Ces deux pôles sont l’immobilité et l’excès de mouvement. En se laissant attirer vers ces antipodes, le cinéma cesse insensiblement d’être une force de l’ordre ; il produit de vrais, c’est-à-dire vains, simulacres, des intensités jouissives, au lieu d’objets consommables-productifs”. J.-F. Lyotard, *Des dispositifs pulsionnels* (Paris: Galilée, 1994): 60.

9 *Ibid.*: 63.

figural.¹⁰ Immobilisation, immobility, stopping on a fixed image within the movement of the film: these are all effects that come close to the study hypotheses discussed here.

But another aspect can usefully be underlined. When cinema mediates another kind of image, re-mediation and intermediality is generally talked of. This theoretical dimension has been approached from various points of view: Montani's book speaks of intermedial aesthetics as places of "authentication" process activation.¹¹ The term "intermedial" is used here as a philosophical option summarised in the first pages of the book: it is

only by starting from an active comparison between different technical formats of the image (optical and digital, for example) and between its different discursive forms (fictional and documentary, for example), that one can do justice to the irreducible otherness of the real world and the testimony of facts, (media and non-media facts), happening in it.¹²

If doubt is clearly cast on the problem of intermediality by the hypothesis of this article, let us try to focus on the specific case of the still image alone, disregarding authentication but rather proposing it as a case of visual alteration. That is to say, authentication as the result of a montage between different media can – as we shall see in one of the cases of still image cinema shown below – be understood as visual alteration, in accordance with the topic dealt within this journal issue.

10 For an interdisciplinary study of the figural dimension of image analysis, allow me a reference to the collective volume, L. Acquarelli, ed., *Au prisme du figural: Le sens des images entre forme et force* (Rennes: Presses Universitaires de Rennes, 2015).

11 The term "authentication" can be problematic because it resonates semantically with authenticity and, therefore, truth. Montani immediately disambiguated the term, distancing it from this risk of confusion: "Authenticating, from this point of view, is akin to 'rerealizing', rehabilitating the image to the relationship with its irreducible other, with its radical and elusive off-screen". P. Montani, *L'immaginazione intermediale (Rome-Bari: Laterza, 2010): 14. My translation.*

12 Ibid.: 13. My translation.

The shifting fixity of photography in cinema and its hallucinatory effect. From *Blow Up* to *Persona*

In one of the films most frequently cited in textbooks on the photography-cinema relationship, Michelangelo Antonioni's *Blow Up* (1966), it is the dialectic between the photographic medium as authenticating evidence and hallucinatory instrument which plays centre stage. The use of photography as evidence is apparently the main theme, but it is precisely photographic enlargements aimed at visualising the evidence that leads our vision towards hallucination rather than authentication.

The first scene is set in an anonymous park in which the main character Thomas is taking photographs of what seems to be the prudishly amorous games of a couple in the middle of the lawn, with a paparazzo's curiosity and almost for fun. The whole scene is played back to viewers in a sequence in which Thomas, now back in his flat, is hunting out detail in the prints from the negatives he has just developed. The spectator plays the same investigative game as Thomas, scrutinising the black and white images of the scene seen shortly before in the diegetic reality of the film. At a certain point, Thomas ceases to act as the viewer's delegate, and the frame is entirely taken up by the images (Fig. 1 and 2).



Fig. 1. Michelangelo Antonioni, *Blow Up*, 1966. Still from film.



Fig. 2. Michelangelo Antonioni, *Blow Up*, 1966. Still from film.

We leave behind the narrative time frame of the film and move into a space-time otherness in which sound reproduces the background noise of the leaves blowing in the wind. A memory? The authentication of a memory? Or rather a hallucination? This exiting from the film, a sequence made up of 15 shots, lasting just under a minute in total, establishes a further space-time dimension. The succession of shots apparently follows a “detective” logic, but the leaving behind of diegetic time and the photographic texture, in the sense of figurative density – profoundly different from the cinematographic texture preceding and following on from it – and the immobility of the figuration, confer a different iconic nature on this sequence. Not only does it shift viewers into a space and time otherness, but it also seems to position itself within the film as a sequence whose diverse legibility gradually contaminates the rest of the film’s shots, suspending its already weak narrative currents.

The photo designed to “indicate” the corpse, in its exaggerated enlargement, resembles an abstract painting (Fig. 3), showing nothing but its support and its texture and, moreover, the film urges us to compare it with the paintings of Thomas’s friend Bill, an abstract figurative painter (Fig. 4).¹³

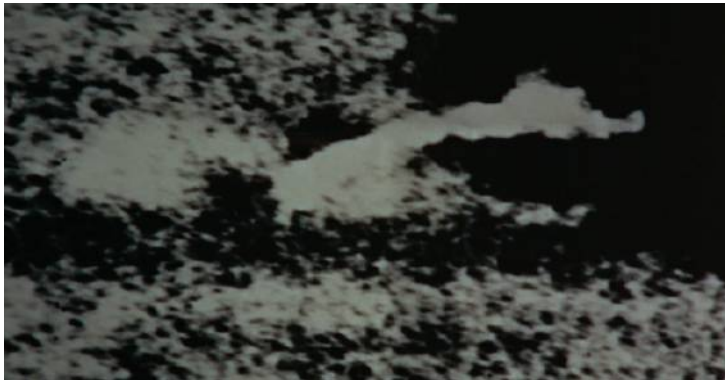


Fig. 3. Michelangelo Antonioni, *Blow Up*, 1966. Still from film.



Fig. 4. Michelangelo Antonioni, *Blow Up*, 1966. Still from film.

13 In Fig. 4, the female character in a dialogue with Thomas explicitly says that the photograph looks to her like one of Bill’s paintings.

In an earlier scene, Bill tries to describe his paintings as follows:

They don't mean anything when I do them. Just a mess. Afterwards I find something to hang on to. Like that...like that leg. Then it sorts itself out...and adds up. It's like finding a clue in a detective story.

The abstract picture prefigures the search for evidence in the photo. But what if the picture itself is abstract? Thomas looks for fresh evidence of the murder seen in the photographs, first returning alone to the site of the alleged crime and finding the body. When he tries to convince another friend of his to look for proof of the existence of the corpse, he is not believed. No one seems to care about the possible referent of the photograph, as if the photograph itself was pushing for a return to Lacanian reality within a society hypnotised by fashionable images which no one wants to face up to. When Thomas returns to the park for a second time to photograph the corpse up close, it has disappeared. Initially examined as reassuring ontological realism, the photograph is actually the place where memory and hallucination break through into the reality effect generated by cinematic movement.

Ingmar Bergman's film *Persona* (1966), which Bellour himself included in the above-mentioned article, is an interesting still image in cinema case study. It takes various forms, first occupying the whole screen, then as an image displayed as a photograph within a diegetic action, then as a photograph explored by the camera, and then as a still image juxtaposing close-ups of the two women.

The film focuses virtually in its entirety on the relationship between a patient, Elisabeth Vogler (Liv Ullmann) suffering from voluntary aphasia, and a nurse, Alma (Bibi Andersson). This caring relationship becomes increasingly intimate once the two women go to the beachfront house the clinic's therapist has advised Elisabeth to recuperate in. The central theme of the film becomes the double, in the Freudian sense, as the two women's relationship gets gradually more psychologically complex. While on one

hand Elisabeth's silence forces Alma to confide the secrets of her life, Alma herself, after secretly reading a letter from Elisabeth to the therapist which she feels ridicules her, becomes increasingly irritable and begins to despise Elisabeth for what she sees as her selfish and corrupt nature. At the same time Alma begins to feel guilty for having an abortion and to identify with Elisabeth who seems unable to love her child, having rejected it from birth. Ingmar Bergman builds the film on this progressive identification, in a crescendo that culminates in something close to a mirror image between the two figures before they are juxtaposed into a sort of hybrid face. The dizzying nature of the double is triggered even before the two characters come on the scene when, in a prologue in a morgue, a child gets up and moves towards a close-up of a woman's photograph to examine it with his hand. The facial features of the two women – who we later discover to be Elisabeth and Alma – in this seemingly fixed photographic close-up gradually become less sharp until a subtle transition occurs between them (Fig. 5 and 6).



Fig. 5. Ingmar Bergman, *Persona*, 1966. Still from film.



Fig. 6. Ingmar Bergman, *Persona*, 1966. Still from film.

Although it is the pre-prologue that “disrupts” the linearity of the whole film’s narrative (a tight montage of figures juxtaposed in disparate ways, sometimes following a meta-cinematic theme), the changing portrait sequence is charged with such great power as to expand its reach into the rest of the narrative. The photograph of Elisabeth’s son (Fig. 7) is a further key element, a sort of narrative accelerator, snatched from Elisabeth herself and then kept by her to be reassembled in the scene where the logic of the double between the two women reaches its climax.



Fig. 7. Ingmar Bergman, *Persona*, 1966. Still from film.

But it is a historical snapshot, an emblem of Nazi violence and its humiliation of its victims, the photo of the so-called “Warsaw child” representing the greatest perceptive caesura. In the year *Persona* was released, although knowledge of Nazi atrocities was still generally not widespread, the photo had already been used a decade earlier in Alain Resnais’ *Nuit et Brouillard* (1956) and was already emblematic of the Holocaust, after it was used as a poster for a first exhibition on Nazism’s calculated ferocity in Berlin *Die Vergangenheit mahnt*. The photo as a diegetic object (Fig. 8) casually found by Elisabeth inside a book, and placed under a bedside lamp to make it easier to see, absorbs the entire frame accompanied by a strident note in a crescendo of intensity lasting 30 seconds in which the different shots blot out the photo’s details (Fig. 9).



Fig. 8. Ingmar Bergman, *Persona*, 1966. Still from film.

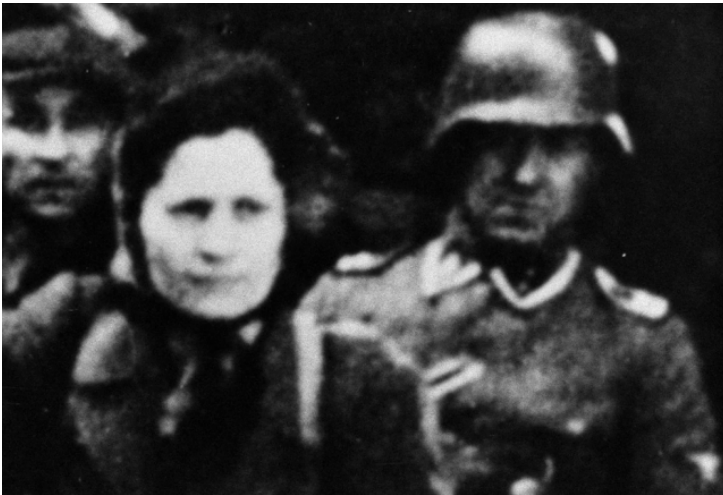


Fig. 9. Ingmar Bergman, *Persona*, 1966. Still from film.

A historical document which was already a symbol of Nazi violence (but also its unrepresentability), then, breaks into the psychological story of Elisabeth and Alma, isolated from the world and the rest of humanity, with its documentary but also anthropological load: the gestures and glances associated with humiliation, the executioners' and victims' faces and expressions standing out around the child's frightened eyes and his condition as a totally defenceless victim. Whilst the rightness of this choice might be questioned, if this intermedial treatment of the archive can more or less "authenticate" the photo itself,¹⁴ there is no doubt whatsoever that this half-minute in which photographic fixity takes over from cinematic movement triggers a perceptive reaction. Not only is the spectator suddenly projected into traumatic memory of Nazism, but the film's photographic standstill triggers a sort of perceptive shock, a dissonance between the flow of diegetic reality and the condensation of the photographic gaze and its details.

14 See P. Montani, *L'immaginazione intermediale*.

Another case of intermediality brings the historical documentary archive into the two women's seemingly disconnected-from-the-world narrative: a televised news extract about the Buddhist monk who committed suicide by setting himself on fire during the Vietnamese dictatorship supported by the American government. In contrast to the photo, this TV montage showing the excruciating image of his self-immolating body remains diegetic, in a first shot because it is framed by the television set and, in a second one, in which it takes up the whole frame, because the television commentator's voice-off preserves the continuity of the film's temporal rhythm. The turmoil in this sequence, both Elisabeth's who, in alternating montage, brings her hand to her mouth and cries out in fright, and the viewer's, who may identify with her feelings, is part of the continuity of filmic perception. The arrest scene in the photo, on the other hand, seems to be charged with excessive otherness, challenging the film's narrative and rhythmic structure.

Moreover, the scene following the photograph of the Warsaw ghetto marks an acceleration in the ambiguity between reality and hallucination in which Elisabeth's husband visits and mistakes Alma for his wife.

The film's last prolonged fixedness (Fig. 10) does not take the form of a photographic support but retains the very nature of the film, suggesting a photographic standstill, first prefigured by a juxtaposition of the two halves of the two women's respective faces. The hallucinatory feel of the exchange of personalities is complete and could only take the form of a final and more experimental freeze-frame.



Fig. 10. Ingmar Bergman, *Persona*, 1966. Still from film.

A cinema made of photographs, the cine-photo-romance *La Jetée*

These two analyses would seem to support my hypothesis that the presence of a photograph in a film – especially when it extends to the entire frame, breaking the rhythm of the moving image – provokes a visual alterity that generates a reality-hallucination ambiguity. It is difficult to generalise this hypothesis because each film has its own complexity and internal structure but it may, in any case, be a valid element of comparison for future analyses. I will bring this article to a close with an analysis of a film that brings us back to the dream considerations I made at the beginning of the article. Although it resembles a film, *La Jetée* (Chris Marker, 1962) is, as the director declares in the opening credits, a photo-novel.¹⁵

The film is, in fact, constructed around the montage of photographic images only, often juxtaposed by means of a cross-fade, creating overlaps. Dream and memory interpenetrate in reminiscence: a survivor of the Third World War is taken prisoner and subjected to experiments, using his vivid imagination, to open up time gaps with the past and then with the future, in order to obtain the technologies needed to reactivate an uninhabitable world replete with destruction and radioactivity. This apocalyptic environment is the background to a psychoanalytical dimension of traumatic time. The beginning of the film is clear in this sense; the voice over reads: “Ceci est l’histoire d’un homme marqué par une image d’enfance”; later it will be spoken of as a “scène qui le troubla par sa violence”.

15 It is curious that Barthes, who wrote his text on the photogram and obtuse sense in 1970 (already quoted extensively at the beginning of this article), does not mention this film, especially if we consider a note in his text referring directly to the photo-novel, on popular culture magazines: “Here are other ‘arts’ which combine still (or at least drawing) and story, diegesis – namely the photo-novel and the comic-strip. I am convinced that these ‘arts’, born in the lower depths of high culture, possess theoretical qualifications and present a new signifier (related to the obtuse meaning). This is acknowledged as regards the comic strip but I myself experience this slight trauma of *signifiante* faced with certain photo-novels: ‘*their stupidity touches me*’ (which could be a certain definition of obtuse meaning)”. R. Barthes, *Image, Music, Text*: 66. If we are dealing here with an entirely different kind of photo-novel (surely not touching for its stupidity!), it seems to me that Barthes’ reflections on obtuse sense could also apply to *La Jétée*.

The gap between image and scene explains the problem of the difficult figuration of childhood memories. An image affecting a child, then probably forgotten and stored away in the unconscious then emerging once again in a dream, in the film's narration, in a memory of the past heterodirected by the executioners' experiments.

The key to the heterogeneity of the traumatic time grafted onto the images is once again present in the words recited by the voice-off:

Rien ne distinguent le souvenir des autres moments. Ce n'est que plus tard qui se font reconnaître, à leurs cicatrices. Ce visage [Fig. 11] qui devait être la seule image du temps de paix à traverser le temps de guerre. Il se demanda longtemps s'il l'avait vraiment vu ou s'il avait créé ce moment de douceur pour étayer le moment de folie qu'allait venir.



Fig. 11. Chris Marker, *La Jetée*, 1962. Still from film

Memory becomes image only *après-coup*, re-signifying certain moments, reabsorbing them around images. The *La Jétée* images indeed seem to have this patina of *après-coup* re-signification. The sharpness of their black and white with vivid contrasts is only opacified by cross-fade transitions. In any case, even in their transparency, all the images seem to be inhabited by this traumatic time, somewhere between memory, dream and hallucination. A very brief moving sequence suddenly breaks

into the montage of still images when, in the intimacy of her bed, the woman in the memory wakes up, opens her eyes and directs her gaze into the camera (Fig. 12).



Fig. 12. Chris Marker, *La Jetée*, 1962. Still from film

It is a sudden enunciative change that seems designed to awaken us from the torpor induced by this story told through salient points, fixed images where the forces of the image in movement converge, as if absorbed, in an oneiric iconology that barely opens up a gap in traumatic time.

This *douceur scene*, immersed in a distant childhood memory in the context of the children taken onto the *jetée* at Orly airport to watch the planes take off, is none other than the image preceding the trauma: the child who, on the *jetée*, sees the murder of his adult self, having been followed through time by one of his executioners to kill him (Fig. 13 and 14).



Fig. 13. Chris Marker, *La Jetée*, 1962. Still from film



Fig. 14. Chris Marker, *La Jetée*, 1962. Still from film

While it is clear that the *La Jetée* theme lends itself to a hallucination rhetoric, it seems to me that the decision to use still images may make this film an extreme case corroborating this article's thesis.

Conclusions

This short paper suggests that the boundary between the transparency of the reality effect and the opacity of hallucination is labile and porous. We have seen that cinema, which immobilises 24-frames-per-second movement in favour of the fixed image, is one of the artistic strategies that seem to bring in the complexity of this boundary and this dialectic. As we have seen, this hypothesis is difficult to generalise, but it seems to me that it deserves further study in the broader field of intermediality and its effects. The three case studies analysed here bring in some additional elements, differentiating in particular cases in which photos are inserted into the film's diegesis (in *Blow Up* in the various scenes in Thomas's studio, in *Persona* with the photo of the child but also, in a certain way, with the large portraits of the two women) and when they replace the film's diegesis itself. The latter seem to highlight the hallucinatory power of the still image in cinema with greater intensity.

Images that we should not see. The issue of non-perceptual attitudes from film to virtual reality



by Enrico Terrone

Abstract

This paper casts film experience as a sort of disembodied perception. I will show how this experience can be manipulated and altered in order to approximate to mental states of fictional characters, in particular embodied perception, memory and imagination. I will acknowledge that film experience can approximate to non-perceptual attitudes such as memory and imagination much better than the experience elicited by theater. Yet, I will contend, film experience cannot emulate the phenomenology of non-perceptual attitudes since it remains a sort of disembodied perception even when it is manipulated by filmmakers in order to approximate memory states or imaginative states of fictional characters. Finally, I will argue that virtual reality, in virtue of both its proximity to embodied perception and its potential for manipulation, is, in principle, in a better position than film when it comes to trying to emulate non-perceptual attitudes such as memory and imagination.

[Film](#) [Virtual Reality](#) [Perception](#) [Memory](#) [Imagination](#)

To quote this essay: E. Terrone, “Images that we should not see. The issue of non-perceptual attitudes from film to virtual reality”, *AN-ICON. Studies in Environmental Images*, no. 1 (2022): 69-90

Cloe sees a black cat, Jack remembers a black cat, Lisa imagines a black cat. According to representationalist conceptions of the mind,¹ Cloe's, Jack's and Lisa's mental states have the same representational content, namely a black cat, and yet they differ as regards their attitude, that is, the way that content is represented. Perceiving a black cat, remembering a black cat and imagining a black cat are three different experiences in virtue of three different attitudes. Specifically, according to Uriah Kriegel's "Sartrean account",² the perceptual attitude represents-as-present its content, the memory attitude represents-as-past its content, and the imaginative attitude represents-as-possible its content.

All this raises an interesting issue about film experience. On the one hand, according to experiential theories of depiction,³ films provide us with experiences whose "pictorial attitude" somehow emulates the perceptual attitude. On the other hand, scholars such as Hugo Münsterberg or Erwin Panofsky have stated that films allow us to share not only the perceptual point of view of fictional characters but also their inner life, which involves states such as memory or imagination.⁴ These two statements are in tension: if the pictorial attitude which characterizes film experience is a sort of perceptual attitude, how can film spectators enjoy experiences based on memory attitudes or imaginative attitudes?

I will argue that the spectator cannot enjoy the latter experiences. The spectator can only ascribe such experiences to characters by relying on the perceptual experience she is enjoying. Finally, I will argue that, quite

1 T. Crane, "The intentional structure of consciousness", in A. Jokic, Q. Smith, eds., *Consciousness: New Philosophical Perspectives* (Oxford: Oxford University Press, 2003): 33-56; D. Chalmers, "The representational character of experience", in B. Leiter, ed., *The Future for Philosophy* (Oxford: Oxford University Press, 2004): 153-180.

2 U. Kriegel, "Perception and imagination. A Sartrean account", in S. Miguens, G. Preyer, C. Bravo Morando, eds., *Prereflective Consciousness: Early Sartre in the Context of Contemporary Philosophy of Mind* (London: Routledge, 2015): 257-288.

3 R. Hopkins, "Depiction", in P. Livingston, C. Plantinga, eds., *The Routledge Companion to Philosophy and Film* (London: Routledge, 2009): 64-74.

4 H. Münsterberg, *The Photoplay: a Psychological Study* (New York: Appleton, 1916); E. Panofsky, "Style and medium in the motion pictures" (1934), in D. Talbot, ed., *Film: An Anthology* (Berkeley: University of California Press, 1959): 15-32.

surprisingly, virtual reality is in a better position than film as regards the emulation of non-perceptual attitudes.

Film experience as disembodied perception

Film experience is a perceptual experience. The audience perceives objects and events taking place in the world that the film portrays. The Lumière Brothers *Sortie des Usines Lumière* (1895) is paradigmatic in this respect: the audience sees workers leaving the factory in a way that is *analogous* to the way one would see those workers if one were in front the factory. Analogous, however, does not mean *identical*. While in ordinary perception we experience things as organized in an “egocentric space”, that is, a space that has our body as its own center,⁵ in cinematic perception we experience things as organized in a space that has only our sight, not our body, as its own center. The space depicted is experienced as “detached” from our body.⁶

The spectator of *Sortie des Usines Lumière* sees workers exiting the factory from a standpoint in front of the factory, but she does not occupy that standpoint and she does not have the impression of occupying it. Even spectators of the Lumière Brothers *L'arrivée d'un train en gare de La Ciotat* (1895) normally do not have the impression of occupying the standpoint in front of the train, in spite of the popular fable that suggests otherwise.⁷

Film experience, so understood, is a disembodied perception. We can perceive things from a viewpoint that our body is not forced to occupy. It is worth noting that by “disembodied perception” here is just meant the perception of a space in which our body does not have any place. Hence, film experience is disembodied only with respect to the experienced relationship between the spectator and

5 G. Evans, *The Varieties of Reference* (Oxford: Clarendon Press, 1982).

6 N. Carroll, *Theorizing the Moving Image* (Cambridge: Cambridge University Press, 1996).

7 M. Loiperdinger, “Lumière’s arrival of the train. Cinema’s founding myth”, *The Moving Image* 4, no. 1 (2004): 89-118.

the space portrayed. The spectator's body, however, keeps playing a crucial role in the whole film experience which, as a twofold experience, also includes the spectator's relationship to the space in which the film is screened.⁸

Even a paradigmatic essay on the embodied character of film experience, namely Vivian Sobchack's *The Address of the Eye: A Phenomenology of Film Experience* (1992), acknowledges that the perspective of the spectator as an embodied subject is different from the perspective on the world depicted that the film provides us with. Yet, Sobchack states that film experience is embodied all the way through because there is a further body at work, namely, the film's body:

We recognize the moving picture as the work of an anonymous and sign-producing body subject intentionally marking visible choices with the very behavior of its bodily being. However, these choices are not initiated by the movement of our bodies or our intending consciousness. They are seen and visible as the visual and physical choices of some body other than ourselves [...]. That some body is the film's body.⁹

What does it exactly mean that the film has a body? This seems to be a suggestive metaphor that should be unpacked for rigorous theorizing. Sobchack offers the following characterization of the film's body: "The camera its perceptive organ, the projector its expressive organ, the screen its discrete and material occupation of worldly space".¹⁰ If the film's body is just that, it comes down to a suggestive characterization of the film's screening. Still Sobchack also insists on the "choices" that the alleged film's body makes thereby determining our point of view on the space portrayed. Precisely because that point of view does not depend on the position and the movement of our

8 R. Hopkins, "Depiction". See also E. Terrone, "Imagination and perception in film experience", *Ergo*, no. 5 (2020): 161-190.

9 V. Sobchack, *The Address of the Eye: A Phenomenology of Film Experience* (Princeton: Princeton University Press, 1992): 278. Thanks to a referee for pushing me to discuss Sobchack's view.

10 *Ibid.*: 299.

body, I find it worthwhile to cast the experience it provides as disembodied. While ordinary perception, as an embodied experience, depends on the position and movement of our body, film experience is disembodied since it depends on choices that are not up to us. Whom are those choices up to? To the filmmaker for sure, and yet scholars like George Wilson argue that, in our engagement with fiction films, we rather experience those choices as the outcome of the “minimal narrating agency” of a fictional narrator.¹¹ Perhaps what Sobchack calls the film’s body may be an interesting characterization of how we experience the actual agency of the filmmaker or, if Wilson is right, the fictional agency of the narrator. Nevertheless, the fact remains that the film’s body is not the spectator’s body and I reckon that this is enough to warrant the characterization of film experience as disembodied perception.

Such a disembodied nature of film experience has an interesting consequence. Since film experience, as disembodied perception, involves a point of view that does not depend on our body, that point of view can change without the need of moving our body. Neither *Sortie des Usines Lumière* nor *L’arrivée d’un train en gare de La Ciotat* exploit this option, but later films do so by means of camera movements and editing.

The specificity of film experience

In ordinary perception we experience things as taking place in a determinate place and time, namely, *here*, the place where our body is, and *now*, the time when our experience occurs. In cinematic perception, on the other hand, place and time remain indeterminate. Our perception, as such, does not tell us where and when the things perceived take place. Cinematic perception needs a cognitive supplementation in order to fix the spatial and temporal coordinates of what one is perceiving. Films can provide

11 G.M. Wilson, *Seeing Fictions in Film: The Epistemology of Movies* (Oxford: Oxford University Press, 2011): 129.

such supplementation either explicitly, by means of devices such as voice over and inscriptions, or implicitly, by relying on clues embedded in the scenes portrayed.

Furthermore, film perception is not up to us in the way ordinary perception is. In the latter, I can decide, at least to a certain extent, what I am going to perceive. In film experience, instead, I am completely deprived of autonomy. In other words, film experience is predetermined in a way ordinary experience is not. One might say that ordinary perception is a natural experience whereas cinematic perception is rather an artificial experience whereby we perceive what filmmakers (or narrators) have established for us. In the specific case of fiction films, filmmakers (or narrators) guide us in the perceptual exploration of fictional worlds. That is arguably the most insightful way of unpacking Sobchack's metaphor of the film's body.

Let me consider, as an example, David W. Griffith's *An Unseen Enemy* (1912), which tells the story of two orphan sisters whose heritage is threatened by a treacherous housekeeper and her accomplice. We discover this story through a series of disembodied perceptual experiences of the same kind as those elicited by *Sortie des Usines Lumière* and *L'arrivée d'un train en gare de La Ciotat*. We see the two orphans, then the housekeeper, then the elder brother of the two girls who places the heritage in the safe, then the housekeeper who spies him, and so on and so forth. The filmmaker has designed this series of perceptions in a way that provides us with a sort of "unrestricted epistemic access" to the relevant facts of the story.¹² Unlike the two orphans, we are aware from the beginning of the threat coming from the housekeeper. Moreover, unlike the housekeeper, we are aware of the brother's attempt to help his sisters and prevent theft. In sum, the spectator of *An Unseen Enemy* perceives more, and therefore knows more, than the characters in the story; the "enemy" is "unseen" only for the characters, not for the audience.

12 G.M. Wilson, *Narration in Light: Studies in Cinematic Point of View* (Baltimore: Johns Hopkins University Press, 1986).

This is the basic functioning of fiction films, which corresponds to the omniscient narrator in literature. However, other configurations are possible in which the audience's knowledge of relevant facts is "restricted" to that available to characters or is even narrower than the latter.¹³ For example, in Alfred Hitchcock's *Rear Window* (1948) the audience's knowledge is as restricted as that of the character L.B. Jefferies (with one important exception, however: we see the murderer leaving his apartment with his lover while Jefferies is sleeping). In Pablo Larrain's *Ema* (2019), the audience's knowledge is even narrower than that of the eponymous heroine; the latter has access from the beginning to the truth about the new adoptive parents of her son whereas the audience will discover this truth only at the end of the film.

A further restriction that affects film experience concerns the mode of this experience, which is just disembodied perception. In ordinary experience, on the other hand, one can enjoy a variety of experiential attitudes: embodied perception, first of all, but also memory and imagination, and possibly perceptual illusion, hallucination and dream. Here is another sense in which the audience can find it hard to know what characters know. What is at stake here is phenomenal knowledge, that is, knowing what it is like for a subject to undergo a certain experience.

For sure, empathy may enable the audience to acquire phenomenal knowledge concerning the affective and emotional dimension of a fictional character's experience.¹⁴ For instance, the audience can share the character's fear or the character's surprise. Yet, affects and emotions are evaluative mental states that are grafted onto more basic cognitive states such as perceptions, memories, and imaginings,¹⁵ whose distinctive attitude is surely harder to access through empathy. The audience may deploy empathy to know what it is like to for a character to feel fear or joy but something more is required to grasp

13 Ibid.

14 J. Stadler, "Empathy and film", in H.L. Maibom, ed., *The Routledge Handbook of Philosophy of Empathy* (London: Routledge, 2016): 317-326. Thanks to a referee for leading me to consider the role of empathy.

15 K. Mulligan, "From appropriate emotions to values", *The Monist* 81, no. 1 (1998): 161-188.

the phenomenal difference between an embodied perceptual experience and a memory episode or an imagining. Filmmakers are thus challenged to design disembodied perceptual experiences that can approximate to the basic cognitive experiences enjoyed by characters, thereby leading the audience to grasp what is going on in the characters' minds. This is arguably one of the most fascinating challenges that cinema has addressed along its history.

Approximating to embodied perception

Although film experience and ordinary perception are both perceptual experiences, they differ inasmuch the latter is embodied in a way the former is not. That is why, in ordinary experience, we can move towards the things we perceive and possibly touch them, but we cannot do so in film experience.

The usual way in which filmmakers lead the audience to share the embodied perceptual experience of a character consists in providing the audience with a standpoint that corresponds to that of the character. This mode of representation, which is usually called “subjective shot”, enables us to share the visual perspective of the character in spite of the fact that our body does not occupy the corresponding standpoint, which is instead occupied by the character's body. As Kendall Walton puts it,

Following a shot of a character looking out a window, there is a shot of a scene outside. Watching the second shot, we imagine observing the scene, and we judge that the character looking out the window has an experience “like this”, like the one we imagine enjoying. We do not attribute to the character an experience (much) like our actual visual experience, a visual experience of a film shot, of a depiction of the scene outside the window. The experience we attribute to the character is like our actual one only insofar as imagining seeing is like actually seeing.¹⁶

16 K.L. Walton, “Fictionality and imagination – mind the gap”, in *In Other Shoes: Music, Metaphor, Empathy, Existence* (Oxford: Oxford University Press, 2015): 17-35, 13.

Let me assume that what Walton calls “imagining seeing”, here, matches what I call “disembodied perception”. Under this assumption, we can interpret Walton’s last sentence as stating that the experience elicited by the point-of-view remains a disembodied perception, which is not identical with, but only approximates to, the embodied perception of the character. Overlooking this limitation can lead to disastrous effects. Robert Montgomery’s *Lady in the Lake* (1947), for example, aims to turn the audience’s disembodied perception into the perceptual experience of the main character along the whole duration of the film, but the result is just that the audience has “the impression that there is a camera by the name of ‘Philip Marlowe’ stumbling around Los Angeles and passing itself off as the well-known human being of the same name”.¹⁷

In fact, more cautious and parsimonious uses of the subjective shot can have outstanding aesthetic effects. Griffith’s *An Unseen Enemy* is exemplary in this respect. I pointed out earlier that the film is based on “objective” shots from neutral standpoints that are aimed to elicit pure disembodied experiences from the audience. Yet, quite exceptionally, one subjective shot emphasizes the most dramatic passage of the story. This shot is a close-up of the gun that the housekeeper passes through a hole in the door of the room where the two sisters took refuge (Fig. 1). We see the gun from the standpoint of the younger sister (Fig. 2), and this subjective shot emphasizes the centrality of that character in the narrative.



Fig. 1. David W. Griffith, *An Unseen Enemy*, 1912. Still from film.

17 G.M. Wilson, *Narration in Light*: 86.



Fig. 2. David W. Griffith, *An Unseen Enemy*, 1912. Still from film.

She is the one who has a psychological and relational arc of transformation along the story: at the beginning she refuses reluctantly to kiss her boyfriend but in the last image of the film she finally accepts the kiss. It is tempting to see the film as a sort of bildungsroman of this girl; specifically, her initiation to sexuality. This hermeneutic temptation is encouraged by the subjective shot in which the gun passing through the hole evokes a sort of phallic figure. The next shot shows that the girl is horrified by the gun. Later in the story, however, she finds the courage to try to grasp the gun, and then slumps back (Fig. 3 and 4).



Fig. 3. David W. Griffith, *An Unseen Enemy*, 1912. Still from film.



Fig. 4. David W. Griffith, *An Unseen Enemy*, 1912. Still from film.

Interestingly, the editing connects this image of the girl to the image of her boyfriend walking in the fields (Fig. 5).



Fig. 5. David W. Griffith, *An Unseen Enemy*, 1912. Still from film.

This link does not seem to be motivated by the course of the narrative but rather by a sort of symbolic pattern.

Approximating to memory

The experience of the spectator who watches a film such as *An Unseen Enemy* consists in a series of perceptual perspectives on the fictional world. Many of them are from a neutral, unoccupied point of view but some of them can match the perceptual point of view of a character. Most films function in this way. Some films even try to make us share the perceptual point of view of non-human characters. For example, John McTiernan's *Predator* (1987) makes us share the perceptual point of view of an alien creature, and Pietro Marcello's *Bella e perduta* (2015) that of a buffalo. On the other hand, there are films that do not limit themselves to making us share the perceptions of certain fictional characters but also aim to make us share other basic cognitive states of them.

Let me begin with the case of memory. At the turning point of Michael Curtiz's *Casablanca* (1942), Rick remembers his love affair with Ilsa in Paris. The combination of the movement of the camera towards Rick's face with the crescendo of the music and the white dissolve indicates that the following scenes are to be taken as memories of Rick (Figg. 6,7 and 8). Yet, the kind of experience whereby the spectator experiences this scene is perception, not memory.

The flashback makes us perceive the events that Rick is remembering rather than his memory experience. We have not the impression of remembering those events, that is, we are not enjoying the peculiar phenomenology of memory. Rather, we keep perceiving those past events set in Paris in the same disembodied way in which we were perceiving the present events set in Casablanca which have been portrayed before the flashback.



Fig. 6. Michael Curtiz, *Casablanca*, 1942. Still from film.



Fig. 7. Michael Curtiz, *Casablanca*, 1942. Still from film.



Fig. 8. Michael Curtiz, *Casablanca*, 1942. Still from film.

Memory experiences usually are fragmentary, incomplete and unstable whereas the Paris events portrayed in the film exhibit the typical accuracy, fluidity and stability of perception. Moreover, memory experiences typically involve a first-person perspective whereas most shots in the *Casablanca* flashback are taken from a neutral objective perspective, not from Rick's perspective. Most importantly, memory experiences, as such, involve a feeling of pastness whatever their content, whereas our experience of these scenes of *Casablanca* lack that phenomenological hallmark. Although Rick is represented as remembering, the flashback only makes us perceive what is remembered, the content of his memory. This is the standard way in which flashbacks encode memory in film. We do not think that Rick's memory experience is like this. We just think that we are seeing (in a perceptual attitude) the events that Rick is remembering (in the memory attitude). At most, certain films can use stylistic device such as blurred images or shift from color to black and white in order to stress that the spectator's perceptual experience is meant to encode another kind of mental state. Yet, the spectator experience remains perceptual in nature. Seeing blurry or seeing in black and white are still ways of seeing.

Perhaps a better way of getting the spectator closer to the memory state of a character might consist in casting as a flashback a shot that was previously conjugated in the present tense. For example, in François Truffaut's *L'amour en fuite* (1979) flashbacks are made of shots of previous films of the Antoine Doinel series, so that the spectator shares Antoine's experience of remembering those events. Yet, these cases are quite exceptional. In most films that use flashbacks, only the character is undergoing a memory experience while the spectator is rather enjoying a disembodied perception.

Approximating to imagination

Memory differs from imagination in that one remembers events that one previously perceived whereas

the events imagined could not have been perceived. Imagination indeed, unlike memory, can represent events that did not take place. So, when in John Schlesinger's *Billy Liar* (1963) Billy imagines himself to be the ruler of an imaginary country called Ambrosia, we cannot perceive the corresponding events in the story world of *Billy Liar* because there are no such events in that world.

However, the way in which *Billy Liar*'s spectators are invited to consider Billy's imaginings is analogous to that in which *Casablanca*'s spectators are invited to consider Rick's memories. That is, the combination of a camera movement towards the character's face with music and visual dissolve (Figg. 9, 10 and 11). In *Billy Liar*, the shift to imagination is also stressed by the inner voice of Billy himself who says: "It was a big day for us. We had won the war in Ambrosia. Democracy was back once more in our beloved country...". Yet, the experience that this segment of *Billy Liar* elicits from its spectators remains a perceptual experience. We see Billy on a tank in the middle of the crowd which celebrates his triumph in the war. Just as *Casablanca* makes us *perceive* the events that Rick is remembering, *Billy Liar* makes us *perceive* the events that Billy is imagining. The difference is just that the events remembered belongs to the story world of *Casablanca*, whereas the events imagined do not belong to the story world of *Billy Liar*. Rather, those events belong to a nested fictional world, which the filmmaker has built up within the main fiction in order to represent Billy's imagining.¹⁸



Fig. 9. John Schlesinger, *Billy Liar*, 1963. Still from film.

18 On the notion of nested world, see K.L. Walton, "Fictionality and imagination".



Fig. 10. John Schlesinger, *Billy Liar*, 1963. Still from film.



Fig. 11. John Schlesinger, *Billy Liar*, 1963. Still from film.

Billy Liar does not make us share the imaginative experience of Billy, just as *Casablanca* did not make us share the memory experience of Rick. Imaginings, indeed, usually lack the kind of accuracy, fluidity, objectivity and stability that characterizes our perceptual experience of the events imagined by Billy. Moreover, imaginative experiences, as such, should involve a feeling of unreality whatever their content whereas our experience of these scenes of *Billy Liar* lacks such phenomenological hallmark. The content of our perception, namely, Billy's triumph, may look weird and non-realistic but we experience it in the same way in which we experience other scenes of the film that look much more realistic. Thus, films such as *Billy Liar* do not make us share the imaginative states of fictional characters but only approximate to such states by providing us with perceptual experiences of nested fictional worlds.

Altering the epistemic status of film experience

From a phenomenological perspective, there is just one basic experiential attitude that film spectators

can take towards the fictional events portrayed. Wilson,¹⁹ following Walton,²⁰ calls it “imagining seeing” while I prefer to dub it “disembodied perception”. That said, there are different ways in which spectators can relate this experience to the fictional world they are exploring; this is what Wilson calls the “the epistemic status of the contents of their imagined seeing”.²¹

The default assumption about the epistemic status of film experience is that we are perceiving the fictional world as it is, from a neutral perspective that does not match the point of view of anybody. In other words, the basic epistemic status of film experience is pure perceptual knowledge. Yet, this basic epistemic status can be *altered* by cues coming from the content or the context of our perceptual experience. The main way of altering the epistemic status consists in a shift from the neutral viewpoint of the spectator as a detached observer to the subjective viewpoint of a character. In such cases, the spectator is invited to relate what she is perceiving in a disembodied way to the embodied perception or memory or imagination of a certain character. Yet, the spectator’s experience does not turn into an embodied perception or memory or imagination. It remains a disembodied perception; only its epistemic status undergoes alteration. In the default case, we cast our disembodied experience merely as a source of perceptual knowledge about the objective facts of the fictional world. In the altered states, on the other hand, we cast our disembodied experience as a source of knowledge concerning *also* (in the case of embodied perception and memory) or *only* (in the case of imagination) the subjectivity of a character.

Some films leave the epistemic status of certain shots indeterminate. In Ingmar Bergman’s *Wild Strawberries* (1957), for instance, it is not evident whether the protagonist Isak Borg is remembering or rather imagining certain episodes of his teenage. Spectators just perceive

19 G.M. Wilson, *Seeing Fictions in Film*: 164.

20 K.L. Walton, *Mimesis as Make-Believe: On the Foundations of the Representational Arts* (Cambridge, MA: Harvard University Press, 1990).

21 G.M. Wilson, *Seeing Fictions in Film*: 164.

such episodes in the usual disembodied way and acknowledge that something is going on in Isak's mind rather than in the outer world. One might say that the spectator perceives a nested fictional world which is made of elements coming from both Isak's memory and Isak's imagination, but she cannot precisely tell the imaginative elements from the memory elements. The epistemic status of these shots thus remains indeterminate: suspended, as it were, between memory and imagination. Likewise, the scenes of Federico Fellini's *Otto e mezzo* (1963) that portray the protagonist Guido Anselmi in his childhood (being bathed in wine lees and then put in bed; playing football in the schoolyard and then visiting Saraghina; being punished by the priests and then returning to Saraghina) have an indeterminate epistemic status which lies between memory and imagination. The spectator has a perceptual disembodied experience of a nested fictional world which is made of elements arguably coming from both Guido's imagination and Guido's memory, but she finds it hard to precisely distinguish what is coming from where.

The phenomenological virtues of film compared to theater

If film experience is just a kind of perceptual experience which can at most approximate to other mental states such as memory or imagination, why scholars like Münsterberg and Panofsky have stated that films can lead spectators to enjoy the latter mental states?

I propose a historical explanation according to which statements such as Münsterberg's or Panofsky's are to be read as comparisons between film and theater. Both these forms of art invite the spectator to enjoy a perceptual experience of a fictional world. Yet, the experience that theater elicits from the spectator is ordinary embodied perception whereas film experience is a peculiar kind of disembodied perception. At the theater, the spectator sees the play from a standpoint that corresponds to the standpoint of her body, and that standpoint can change

if the body moves. Slightly moving one's head can be sufficient to change one's perspective on the events portrayed by a play; if one moved closer to the stage, one would even perceive those events from a closer standpoint. In this sense, theater experience works just as ordinary perception; it is as if fictional events had been magically transported in our own environment, in our egocentric space. In film experience, on the other hand, it is the spectator's viewpoint that seems to be magically transported in the middle of fictional events even though her body firmly remains in her seat. Film experience is thus independent from the spectator's bodily movement in a way theater experience is not. This is what motivates the characterization of film experience as a sort of disembodied perception.

Thus, film experience is much more flexible than theater experience when it comes to approximating to other mental states such as memory or imagination, whose content also is quite independent from the position and the possible movements of one's body. Panofsky nicely makes this point when he writes:

In a theater, space is static, that is, the space represented on the stage, as well as the spatial relation of the beholder to the spectacle, is unalterably fixed. [...] With the movies the situation is reversed. Here, too, the spectator occupies a fixed seat, but only physically, not as the subject of an aesthetic experience. Aesthetically, he is in permanent motion as his eye identifies itself with the lens of the camera, which permanently shifts in distance and direction. [...] This opens up a world of possibilities of which the stage can never dream.²²

Among the possibilities of film in comparison with theater, there is surely the capacity to lead the spectator in the proximity of the mental states of the characters. Yet, this does not mean that, in those cases, film experience turns into a memory experience or into an imaginative experience; it remains a perceptual experience, though one aimed at approximating to other mental states.

22 E. Panofsky, "Style and medium in the motion pictures": 18-19.

Film experience, as a disembodied perceptual experience, reveals itself to be especially apt to emulate mental states such as perceptual illusion, hallucination and dream, whose attitude is not as distinct from that of perception as it is the attitude of memory or that of imagination. One can cast perceptual illusions, hallucinations and dreams as perceptual experiences that, unlike standard perception, fail to represent things as they are. Specifically, perceptual illusions lead the perceiver to cast things as having properties they do not actually have, while “partial hallucinations” lead her to perceive things that actually have not their place in her environment, and “total hallucinations”, just like dreams, leads the subject to experience a totally made up environment.²³

Ordinary perception is somehow authoritative as for the reality of its content, and theater experience tends to inherit this epistemic authority, which it applies to the story world. Film experience, on the other hand, has a weaker epistemic authority despite its perceptual character. I contend that this depends on its peculiarly disembodied attitude. While watching a film, we have the impression of seeing characters who inhabit the story world, and events that occur in it, and we usually tend to endorse such impression thereby acquiring pieces of information about the story world. Yet, we do not perceive these events as occurring in the environment we inhabit with our body, and this somehow affect the degree of reliability of those pieces of information. Even though we tend to cast film experiences as a perception of events in the fictional world, we are disposed to acknowledge that this experience might mislead us as regards the way things are in that world. In this sense, film experience is a perceptual experience that can get closer than standard perception and theater experience to illusion, hallucination and dream.

23 For the distinction between partial and total hallucinations, see A.D. Smith, *The Problem of Perception* (Cambridge, MA: Harvard University Press, 2002): 193. Note that I am putting total hallucination and dreams on a par not because I think they are, but just because I reckon that discussing their difference goes beyond the scope of this paper.

If the perceptual experience is a genus among whose species one can find not only standard perception but also illusion, hallucination, and dream, then film experience can be cast as a peculiar further species of the genus, which can emulate all the other mental states of that genus. This fact is exploited by those films that lead the spectator to share the deceptive perceptual experiences of a character. In films such as David Fincher's *Fight Club* (1999) and Ron Howard's *A Beautiful Mind* (2001) we share the partial hallucination of the heroes by being in turn deceived by our perceptual experience of the events portrayed. Likewise, in films such as Robert Wiene's *The Cabinet of Dr. Caligari* (1920) or Fritz Lang's *The Woman in the Window* (1944), we share the total hallucinations or dreams of the characters by wrongly casting certain film experiences as perceptions of events that actually occur in the story world. In Wilson's terms,²⁴ spectators of such films enjoy the proper perceptual experiences but fail to endow them with the proper epistemic status, which is not the reliability of standard perception but rather the unreliability of illusion, hallucination or dream.

In David Lynch's *Mulholland Drive* (2001), at least according to a popular interpretation of the film,²⁵ dream, memory and perception are combined in a way that can be grasped only after the fact. The first part of the film is presented from an allegedly neutral perceptual perspective but later reveals itself to be a dream of the protagonist Diane Selwyn. The material of that dream comes from Diane's memories constituting the flashbacks that we find in the second part of the film, which also provides us with a neutral perceptual perspective on the last moments of Diane's life, from her waking up from her dream to her suicide.

24 G.M. Wilson, *Seeing Fictions in Film*: 164.

25 See for instance B. Wyman, M. Garrone, A. Klein, "Everything you were afraid to ask about *Mulholland Drive*", *Salon* (October 24, 2001), https://www.salon.com/2001/10/24/mulholland_drive_analysis/; P. Bertetto, "L'analisi interpretativa. *Mulholland Drive*", in P. Bertetto, ed., *Metodologie di analisi del film* (Rome-Bari: Laterza: 2007): 223-255.

The phenomenological virtues of virtual reality compared to film

While film provides us with a disembodied perceptual experience, virtual reality makes us perceive an egocentric space, that is, a space which is centered in our body in the way the space of ordinary perception is. Both ordinary perception and virtual-reality experience are such as that our bodily movements correspond to change in our viewpoint whereas the viewpoint of film experience is independent from the viewer's body.

Virtual reality thus shares with theater a significant proximity to ordinary perception that film, instead, lacks. Should we conclude that virtual reality, just like theater, is less apt than film to approximate to non-perceptual mental states such as memory or imagination? Not so.

Film experience, as disembodied perception, is already an altered state in comparison to ordinary perception. Nothing else remains to be altered at the phenomenological level. The only possible alterations, as I have argued earlier, are alterations in the epistemic status of our perceptual experience: clues in the context or in the content of film experience may lead us to cast it as the memory or the imagining of a character, or even as a deceptive experience such as an illusion, an hallucination or a dream. Virtual-reality experience and theater experience, on the other hand, are not intrinsically altered; they work just as ordinary perception works. Yet, virtual-reality experience can be altered in a way in which theater experience surely cannot be altered. Even though the default mode of virtual-reality experience is the emulation of ordinary perception, a virtual reality system might be designed so to provide users with experiences of completely different kinds. Whether and how such experience can effectively emulate memory episodes and imaginings remains an open question. Arguably the emulation of perception has been the main aim of virtual reality technology so far. Still, this technology has also a potential for altering its basic perceptual mode thereby getting the user's experience closer

to other kinds of mental states. Emulating memory and imagination through perception, the great challenge for filmmakers in the twentieth century, might become the great challenge for virtual-reality makers in the twenty-first. Paraphrasing Panofsky's statement, virtual reality might open up a world of possibilities of which film can never dream.

On the altered states of machine vision.

Trevor Paglen, Hito Steyerl,
Grégory Chatonsky



by Antonio Somaini

Abstract

The landscape of contemporary visual culture and contemporary artistic practices is currently undergoing profound transformations caused by the application of technologies of machine learning to the vast domain of networked digital images. The impact of such technologies is so profound that it leads us to raise the very question of *what we mean by “vision” and “image” in the age of artificial intelligence*. This paper will focus on the work of three artists – Trevor Paglen, Hito Steyerl, Grégory Chatonsky – who have recently employed technologies of machine learning in non-standard ways. Rather than using them to train systems of machine vision with their different operations (face and emotion recognition, object and movement detection, etc.) and their different fields of application (surveillance, policing, process control, driverless vehicle guidance, etc.), they have used them in order to produce entirely new images, never seen before, that they present as *altered states* of the machine itself.

[Machine learning](#)

[Digital images](#)

[Paglen](#)

[Steyerl](#)

[Chatonsky](#)

To quote this essay: A. Somaini, “On the altered states of machine vision. Trevor Paglen, Hito Steyerl, Grégory Chatonsky”, *AN-ICON. Studies in Environmental Images*, no. 1 (2022): 91-111

The landscape of contemporary visual culture and contemporary artistic practices is currently undergoing profound transformations caused by the application of technologies of machine learning – one of the areas of so-called “artificial intelligence” – to the vast domain of networked digital images. Three strictly interrelated phenomena, in particular, are producing a real tectonic shift in the contemporary iconosphere, introducing new ways of “seeing” and new “images” – we’ll return later to the meaning of these quotation marks – that extend and reorganize the field of the visible, while redrawing the borders between what can and what cannot be seen.

These three strictly interrelated phenomena are:

- the new technologies of *machine vision* fuelled by processes of machine learning such as the Generative Adversarial Networks (GAN);
- the ever-growing presence on the internet of trillions of networked digital images that are *machine-readable*, in the sense that they can be seen and analyzed by such technologies of machine vision;
- the entirely *new images* that the processes of machine learning may generate.

Considered from the perspective of the *longue durée* of the history of images and visual media, the appearance of these three phenomena raises a whole series of aesthetic, epistemological, ontological, historical and political questions. Their impact onto contemporary visual culture is so profound that it leads us to raise the very question of *what we mean by “vision” and “image” in the age of artificial intelligence*.

What is “seeing” when the human psycho-physiological process of vision is reduced, in the case of machine vision technologies, to entirely automated operations of pattern recognition and labelling, and when the various applications of such operations (face and emotion recognition, object and motion detection) may be deployed across an extremely vast visual field (all the still and moving images accessible online) that no human eye could ever attain? In speaking of “*machine vision*”, are we using an anthropomorphic

term that we should discard in favor of a different set of technical terms, specifically related to the field of computer science and data analysis, that bear no connection with the physiological and psychological dynamics of human vision? Artists-researchers such as Francis Hunger and scholars such as Andreas Broeckmann (with his notion of “optical calculus” as “an unthinking, mindless mechanism, a calculation based on optically derived input data, abstracted into calculable values, which can become part of computational procedures and operations”),¹ Adrian MacKenzie and Anna Munster (with their ideas of a “platform seeing” operating onto “image ensembles” through an “invisual perception”),² Fabian Offert and Peter Bell (with their idea according to which the “perceptual topology” of machines is irreconcilable with human perception)³ have argued for the necessity of moving beyond anthropocentric frameworks and terms, highlighting the fact that machine vision poses a real challenge for the humanities.

Can we still use the term “image” for a digital file, encoded in some image format,⁴ that is machine-readable even when it is not visible by human eyes, or that becomes visible on a screen as a pattern of pixels only for a small fraction of time, spending the rest of its indefinite lifespan circulating across invisible digital networks? Can concepts such as that of “iconic difference” [*ikonische Differenz*],⁵ which highlights the fundamental perceptual difference between an image and its surroundings (its “*hors champ*”) be still applied to machine-readable images?

And what is the status of the entirely new images produced by processes of machine learning? These

1 A. Broeckmann, “Optical Calculus”, paper presented November 2020 at the conference *Images Beyond Control*, FAMU, Prague, video, 5:01, <https://www.youtube.com/watch?v=FnAgBblnMfA>.

2 A. MacKenzie, A. Munster, “Platform Seeing: Image Ensembles and Their Invisualities”, *Theory, Culture & Society* 36, no. 5 (2019): 3-22.

3 F. Offert, P. Bell, “Perceptual bias and technical metapictures: critical machine vision as a humanities challenge”, *AI & Society* (2020), <https://link.springer.com/article/10.1007/s00146-020-01058-z>.

4 On the theory of formats, see M. Jancovic, A. Schneider, A. Volmar, eds., *Format Matters: Standards, Practices, and Politics in Media Cultures* (Lüneburg: Meson Press, 2019).

5 On the notion of “iconic difference”, see G. Boehm, “Ikonische Differenz”, *Rheinsprung 11. Zeitschrift für Bildkritik* 1 (2011): 170-176.

are images that are not produced through some traditional form of lens-based analog or digital optical recording, nor through traditional computer-generated imagery (CGI) systems, but rather through processes belonging to the wide realm of artificial intelligence that either *transform* existing images in ways that were impossible until a few years ago, or *create* entirely new images, never seen before. What do such images represent, what kind of agency do they have, how do they mediate our visual relation to the past, the present, and the future? And why have such new images generated by processes of machine learning been so often considered, both in popular culture and in the work of contemporary artists, to be the product of some kind of *altered state* – a “dream”, a “hallucination”, a “vision”, an “artificial imagination” – of the machine itself?

Before we analyse the way in which this last question is raised, in different ways, by popular computer programs such as Google’s DeepDream (whose initial name echoed Christopher Nolan’s 2010 film “*Inception*”), and by the recent work of contemporary artists and theorists such as Trevor Paglen, Hito Steyerl and Grégory Chatonsky, let us begin with a quick overview of the current state of machine vision technologies, with their operations and applications, and of the new images produced by processes of machine learning that are increasingly appearing throughout contemporary visual culture.

The impact of machine learning technologies onto contemporary visual culture

First tested in the late 1950s, with image recognition machines such as the Perceptron (developed at the Cornell Aeronautical Laboratory by Frank Rosenblatt in 1957), and then developed during the 1960s and 1970s as a way of imitating the human visual system in order to endow robots with intelligent behavior, machine vision technologies have entered a new phase, in recent years, with the development of machine learning processes,

and with the possibility of using immense image databases accessible online as both training sets and fields of application.⁶ If in the 1960s and 1970s the goal was mainly to extract three-dimensional structures from images through the localization of edges, the labelling of lines, the detection of shapes and the modelling of volumes through feature extraction techniques such as the Hough transform (invented by Richard Duda and Peter Hart in 1972, on the basis of a 1962 patent by Paul Hough), the recent development of machine learning techniques and the use of vast image training sets organized according to precise taxonomies – such as ImageNet, in which 14 millions of images are organized according to 21,000 categories derived from the WordNet hierarchy (a large lexical database of English nouns, verbs, adjectives and adverbs)⁷ – have allowed a rapid increase in the precision of all the operations of machine vision.

Among such operations, we find pixel counting; segmenting, sorting, and thresholding; feature, edge, and depth detection; pattern recognition and discrimination; object detection, tracking, and measurement; motion capture; color analysis; optical character recognition (this last operation allowing for the reading of words and texts within images, extending the act of machine “seeing” to a form of machine “reading”).

For a few years now, such operations have been applied to the immense field of machine-readable images. A field whose dimensions may be imagined only if we understand that *any networked digital image* – whether produced through some kind of optical recording, or entirely computer-generated, or a mix of the two, as it is often the case – may be analysed by machine vision technologies based on processes of machine learning such as the Generative Adversarial Networks (GAN).⁸ Starting from vast training sets containing images similar to the

6 For a general overview of computer vision and computer imagery, with its historical developments, see S. Arcagni, *L'occhio della macchina* (Turin: Einaudi, 2018).

7 “ImageNet”, accessed November 3, 2021, <http://www.image-net.org/>.

8 I. Goodfellow *et al.*, “Generative adversarial nets”, *Advances in neural information processing systems* (2014): 2672-2680.

ones the system has to learn to identify, and feeding such training sets into an ensemble of two adversarial neural networks that act as a Generator and a Discriminator that are in competition against one another, the GAN-based machine vision systems have gradually become more and more precise in performing their tasks. All the main smart phone producers have equipped their devices with cameras and image processing technologies that turn every photo we take into a machine-readable image, and internet giants such as Google and Facebook, as well as a host of other companies, have developed machine vision and face recognition systems capable of analysing the immense quantity of fixed and moving images that exist on the internet and that continue to be uploaded every day, raising all sorts of ethical and political issues and highlighting the need for a broader legal framework that for the moment is largely missing.⁹

Considered together, such machine vision systems are turning the contemporary digital iconosphere and the entire array of contemporary screens, with their various dimensions and degrees of definition,¹⁰ into a vast field for data mining and data aggregation. A field in which faces, bodies, gestures, expressions, emotions, objects, movements, places, atmospheres and moods – but also voices and sounds, through technologies of *machine hearing* – may be identified, labelled, stored, organized, retrieved, and processed as data that can be quickly accessed and activated for a wide variety of purposes: from surveillance to policing, from marketing to advertising, from the monitoring of industrial processes to military operations, from the functioning of driverless vehicles to that of drones and robots, from the study of the inside of the human body through the analysis of medical imaging all the way up to

9 As I complete the final revisions of this essay, on 2 November 2021, Facebook just announced its decision to stop using facial-recognition software that could automatically recognize people in photos and videos posted on the social network: a massive shift for a company that is currently trying to reposition itself, also through the new company name Meta, adopted in October 2021.

10 On the aesthetic, epistemological, historical and political implications of the high and low definition of images, see F. Casetti, A. Somaini, eds., *La haute et la basse définition des images. Photographie, cinéma, art contemporain, culture visuelle* (Milan-Udine: Mimesis, 2021).

the study of the surface of the Earth and of climate change through the analysis of satellite images. Even disciplines that might seem to be distant from the most common current applications of machine vision technologies, such as art history and film studies, are beginning to test the possibilities introduced by such an automated gaze, capable of “seeing” and analyzing, according to different criteria, vast quantities of visual reproductions of artworks or vast corpuses of films and videos in an extremely short time.¹¹

In order to fully understand the impact of machine learning onto contemporary visual culture, we need to add, to the vast field of machine vision technologies that we just described, the *new images* produced by processes of machine learning – often, the same GAN that are used to train and apply machine vision systems – that either *transform* pre-existing images in ways that were impossible until a few years ago, or *create* entirely new images, never seen before.

In the first case, we are referring to processes of machine learning capable of *transforming* existing images that can have very different applications: producing 3D models of objects from 2D images; changing photographs of human faces in order to show how an individual’s appearance might change with age (as with the app Face-App) or by merging a face with another face (Faceswap);¹² animating in a highly realistic way the old photograph of a deceased person (Deep Nostalgia, developed by My-Heritage);¹³ creating street maps from satellite imagery;¹⁴ taking any given video, and “upscaling” it, by increasing its frame rate and its definition. An emblematic example

11 See for example the various experiments being developed at the Google Arts & Culture Lab: “Google Arts & Culture”, accessed November 3, 2021, <https://artsandculture.google.com/>, or the way in which the EYE Film Museum in Amsterdam is testing new ways of accessing its collections through a program fuelled by machine vision systems: “Jan Bot”, accessed December 2, 2021, <https://www.jan.bot/>.

12 The website of Faceswap, which announces itself as “the leading free and OpenSource multiplatform Deepfakes software”: “Faceswap”, accessed November 3, 2021, <https://faceswap.dev/>.

13 “Deep Nostalgia”, accessed November 3, 2021, <https://www.myheritage.fr/deep-nostalgia>.

14 R. Matheson, “Using artificial intelligence to enrich digital maps. Model tags road features based on satellite images, to improve GPS navigation in places with limited map data”, *MIT News*, January 23, 2020, <https://news.mit.edu/2020/artificial-intelligence-digital-maps-0123>.

of this last application, which may alter significantly our experience of visual documents of the past, would be the videos realized by Denis Shiryayev¹⁵ in which, through a process of machine learning, a Lumière film such as *L'Arrivée d'un train en gare de La Ciotat* (1896) is transformed from the original 16 frames per second to 60 frames per second, from the original 1.33:1 format to a contemporary 16:9 format, and from the original, grainy 35mm analog film to a 4K digital resolution.¹⁶ In other examples of images transformed by machine learning, the transformations are much more radical, as it happens with the so-called “deepfakes”: videos that use neural networks in order to manipulate the images and the sounds of pre-existing videos – in some cases a single, pre-existing image – producing new videos that have a high potential to deceive. Among the many examples that can now be found across the internet in different domains such as pornography, politics and social media, pornographic videos in which faces of celebrities are swapped onto the bodies of porn actors, a TikTok account with a whole series of odd videos by a “Deep Tom Cruise”,¹⁷ or speeches by public figures such as Barack Obama¹⁸ and Queen Elizabeth¹⁹ whose content has been completely altered in such a way that the movements of their mouths perfectly match the new, invented words they are uttering. And among the applications of deepfakes in the musical realm, the “new” songs by long deceased singers, whose style and voice are reproduced in a highly realistic way by applications of machine learning such as Jukebox, developed by OpenAI²⁰: a “resurrecting” function

15 “Denis Shiryayev”, Youtube channel, accessed November 3, 2021, <https://www.youtube.com/c/DenisShiryayev/videos>. For an online platform offering video enhancement powered by AI, see: “Neural Love”, accessed December 2, 2021, <https://neural.love/>.

16 The video of the upscaled version of *L'Arrivée d'un train en gare de La Ciotat* (1896) can be found all across YouTube, in various black-and-white and colored version. For a version in color, see: Deoldify videos, “[DeOldified] Arrival on a Train at La Ciotat (The Lumière Brothers, 1896)”, Youtube video, February 4, 2020, <https://www.youtube.com/watch?v=EqbOhqXHL7E>.

17 “Deep Tom Cruise”, TikTok account, accessed November 3, 2021, <https://www.tiktok.com/@deeptomcruise>.

18 BuzzFeed Video, “You Won’t Believe What Obama Says in This Video!”, Youtube video, April 17, 2018, <https://www.youtube.com/watch?v=cQ54GDm1eL0>.

19 Channel 4, “Deepfake Queen: 2020 Alternative Christmas Message”, Youtube video, December 25, 2020, <https://www.youtube.com/watch?v=lvY-Abd2FfM>.

20 “Jukebox”, accessed November 3, 2021, <https://openai.com/blog/jukebox/>.

that in the animated photographs of deceased persons of Deep Nostalgia.

In the second case, the use of machine learning processes leads to the *creation* of entirely new images or sections of images: modelling patterns of motion (for example, crowd motion) in video, thereby leading computer generated imagery, in some cases fuelled by artificial intelligence, to produce new kinds of “contingent motion”;²¹ producing highly photorealistic images of objects and environments for different kinds of advertising; inventing perfectly realistic faces of people that actually do not exist through open source softwares such as StyleGan and then make them accessible through projects such as Philip Wang’s *This Person Does Not Exist*.²²

To these widespread applications of machine learning we may add the hybrid, unprecedented imagery produced by the software DeepDream, created in 2015 by the Google engineer and artist Alexander Mordvintsev: a program that uses Convolutional Neural Networks in order to enhance patterns in pre-existing images, creating a form of algorithmic *pareidolia*, the impression of seeing a figure where there is none, which is here generated by a process which repeatedly detects in a given image patterns and shapes that the machine vision system has been trained to see.²³ The result of such a recursive process, in which every new image is submitted again to the same kind of pattern and shape recognition, are images that recall an entire psychedelic iconography that spans through cinema, photography, the visual arts and even so-called *art brut*: images that are here presented as a sort of dream – a hallucinogenic, psychedelic dream – of the machine itself.

21 J. Schonig, “Contingent Motion: Rethinking the ‘Wind in the Trees’ in Early Cinema and CGI”, *Discourse: Journal for Theoretical Studies in Media and Culture* 40, no. 1 (2018): 30-61.

22 “This Person does not exist”, accessed November 3, 2021, <https://thispersondoesnotexist.com/>.

23 The program is now open source: see “Deep Dream Generator”, accessed November 3, 2021, <https://deepdreamgenerator.com/>. See also: “Alexander Mordvintsev”, accessed November 3, 2021, <https://znah.net/>.



Fig. 1



Fig. 2



Fig. 3
The original image (Fig. 1) has been modified by applying ten (Fig. 2) and then fifty (Fig. 3) iterations of the software DeepDream, the network having been trained to perceive dogs.

Exploring the “altered states” of machine vision through Generative Adversarial Networks

The idea that lies at the basis of the DeepDream software – the idea that machine learning technologies, and in particular the Convolutional Neural Networks (CNN) and Generative Adversarial Networks (GAN), may be used in order to explore and reveal *the altered states of machine vision* – can also be found in the recent works of artists (often active also as theorists) such as Trevor Paglen, Hito Steyerl, and Grégory Chatonsky.²⁴ By insisting on the “creative”, image-producing potential of Generative Adversarial neural networks – rather than on their standard application for the training of machine vision systems – the three of them explore a vast field of images that they consider to be “hallucinations”, “visions of the future”, or the product of an “artificial imagination”, characterized by a new form of realism, a “disrealism”.

Trevor Paglen’s entire work as an artist and theorist, since 2016, has been dedicated to the attempt of understanding and visualizing the principles that lie at the basis of machine vision technology. Through texts (sometimes written in collaboration with the researcher Kate Crawford),²⁵ exhibitions, performances, and works made of still and moving images, Paglen has tried to highlight not only the social and political biases that are inherent in the way machine vision systems are structured, but also the way in which such systems diverge profoundly from human vision.²⁶

In an article published in December 2016 in *The New Inquiry* with the title “Invisible Images (Your Pictures Are Looking at You)”,²⁷ Paglen discusses the new challenges that arise in a context in which “sight” itself has become machine-operated and separated by human eyes,

24 Among the first artists who started working with GANs, one should remember Helena Sarin and Mike Tyka. See “Helena Sarin”, AI Artist, accessed November 3, 2021 <https://aiartists.org/helena-sarin>, and “Mike Tyka”, accessed November 3, 2021, <https://miketyka.com/>.

25 K. Crawford, *Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence* (New Haven: Yale University Press, 2021).

26 See: “Trevor Paglen”, accessed November 3, 2021, <https://paglen.studio/>.

27 T. Paglen, “Invisible Images (Your Pictures Are Looking at You)”, *The New Inquiry*, December 8, 2016: <https://thenewinquiry.com/invisible-images-your-pictures-are-looking-at-you/>.

participating in a vast field of image operations. Arguing that what we are currently experiencing is part of a *vast transition from human-seeable to machine-readable images* – a new condition in which “the overwhelming majority of images are now made by machines for other machines, with humans rarely in the loop” – Paglen writes that

if we want to understand the invisible world of machine-machine visual culture, we need to unlearn to see like humans. We need to learn how to see a parallel universe composed of activations, keypoints, eigenfaces, feature transforms, classifiers, training sets, and the like.²⁸

We need to unlearn to see like humans. But how can we not see like humans, how can we step out of our human point of view? Accomplishing this apparently impossible task – a task which echoes the recurrent philosophical problem of how to step out of one’s own socio-historical position, of one’s own cognitive and emotional framework – has been the main goal of Trevor Paglen’s artistic practice during the last few years, as we can see in a body of works that was initially produced in 2017 through various collaborations with computer vision and artificial intelligence researchers as an artist-in-residence at Stanford University, and was first exhibited at the Metro Pictures Gallery in New York in an exhibition entitled *A Study of Invisible Images* (September 8 – October 21, 2017)²⁹, before being presented at various other galleries and museums such as the Osservatorio of the Fondazione Prada in Milan, or the Carnegie Museum of Art in Philadelphia, in an exhibition entitled *Opposing Geometries* (2020).

The works in the exhibition at Metro Pictures present a possible response to the challenge of how to penetrate within systems of machine vision that tend to expel the human gaze from their processes. Among them, we find the attempt to master the machine learning techniques

²⁸ Ibid.

²⁹ A series of images of the works presented in the exhibition can be found at the following address: “Trevor Paglen. A study of Invisible Images”, Metro Pictures, accessed January 19, 2020, <http://origin.www.metropictures.com/exhibitions/trevor-paglen4>.

that are commonly used for machine vision applications, in order to hack them and lead them to produce entirely new images, never seen before, that may be considered as a form of *hallucination* of machine vision.

This is what happens in a series of still images entitled *Adversarially Evolved Hallucinations*, which Paglen developed through a non-standard application, in three steps, of Generative Adversarial Networks.³⁰

The first step consisted in establishing new, original training sets. Instead of using the usual corpuses of images that are used to train machine vision systems in recognizing faces, objects, places and even emotions – corpuses that are often derived by pre-existing and easily available image databases such as the already mentioned ImageNet – Paglen established new training sets composed by images derived from literature, psychoanalysis, political economy, military history, and poetry. Among the various taxonomies he used in order to compose his training sets we find “monsters that have been historically interpreted as allegories of capitalism”, such as vampires, zombies, etc.; “omens and portents”, such as comets, eclipses, etc.; “figures and places that appear in Sigmund Freud’s *The Interpretation of Dreams*”, a corpus which includes various symbols from Freudian psychoanalysis; “Eye-Machines”, a series of images clearly inspired by Harun Farocki’s videoinstallations *Eye-Machine I, II, III* (2001-2003) and containing images of surveillance cameras or of spaces under surveillance; “American Predators”, a corpus containing various predatory animals, plants, and humans indigenous to the United States, mixed with military hardware like predator drones and stealth bombers.

The second step consisted in feeding these unusual training sets into the two neural networks of the GAN system: the Discriminator and the Generator. These two networks begin interacting with one another in an adversarial, competitive way, in such a way that the Discriminator,

30 Information on the *Adversarially Evolved Hallucinations* can be found in Trevor Paglen’s website: T. Paglen, “Hallucinations”, accessed November 3, 2021, <https://paglen.studio/2020/04/09/hallucinations/>.

after having received the initial training set, has to evaluate the images that it receives from the Generator, deciding whether they resemble or not to those of the training set. As the process unfolds through reiterated exchanges between the two neural networks, the Discriminator becomes more and more precise and effective in evaluating the images that are submitted to it.

The third step consists in the artist intervening in the process and choosing to extract, at a given moment, one of the images produced by the Generator: an image that emerges from the sequence of the adversarial exchanges, and that is the result of one of the countless attempts by the Generator to test the precision of the Discriminator, trying to fool it. In the case of the series of the *Adversarially Evolved Hallucinations*, all the images selected by Paglen seem to bear some kind of resemblance to the ones contained in the original training sets – even though we cannot really assess the degree of this resemblance, because the training sets are not accessible to us – while displaying at the same time different forms of deviations and aberrations that recall a sort of psychedelic imaginary.

Among Paglen's *Adversarially Evolved Hallucinations*, we find images with titles such as *Vampire (Corpus: Monsters of Capitalism)*, *Comet (Corpus: Omens and Portents)*, *The Great Hall (Corpus: The Interpretation of Dreams)*, *Venus Flytrap (Corpus: American Predators)*, *A Prison Without Gards (Corpus: Eye-Machines)*. In the case of *Vampire (Corpus: Monsters of Capitalism)*,



Fig. 4. Trevor Paglen, *Vampire* (*Corpus: Monsters of Capitalism*), dye sublimation metal print, 2017

the Discriminator was trained on thousands of images of zombies, vampires, Frankensteins, and other ghosts that have been at some point – be it in essays, literary texts, or films – associated with capitalism. Paglen then set the Generator and Discriminator running until they had synthesized a series of images that corresponded at least in part to a specific class within the given corpus. From all of the even slightly acceptable options that the GAN generated, Paglen then selected the one we see in the series exhibited at Metro Pictures as the “finished work”.

There may be multiple reasons behind Trevor Paglen’s decision to call these images “hallucinations”. To begin with, such images recall a type of imagery that we might consider to be “psychedelic” or “surrealist”: in some of them, we definitely see echoes of Max Ernst, or Salvador Dalì. A second reason may lie in the attempt to emphasize the fact that the result of this non-standard application of the processes of machine learning – a process which unfolds within a closed machine-to-machine space, the invisible space of the back-and-forth between the Generator and the Discriminator from which human eyes are excluded – produces images that, just like human hallucinations, have no footing in exterior reality, or may merge in unpredictable

way with shapes and forms stemming from the perception of the outer world. Finally, the term “adversarially evolved hallucinations” may underline the fact that these images are the result of a machine learning process gone astray: a process which has been hacked and led to drift away from its original, standard applications.

The reference to the term “hallucinations”, though, should not be misleading. What Trevor Paglen tries to show us with his *Adversarially Evolved Hallucinations* has really nothing to do with a disruption of the orderly functioning of human consciousness. What they highlight, rather, is the radical *otherness* of machine vision, if compared with human vision. A radical *otherness* based on operations that have nothing to do with human, embodied vision, which we may just try to grasp through the impossible attempt of “unlearning to see like humans”.

We find a different application of images produced by machine learning in *This is the Future*, an installation by Hito Steyerl which was presented at the Venice Biennale in 2019, and which was conceived as an expansion of the exhibition *Power Plants* at the Serpentine Gallery in London the previous year. In the Venice installation, Hito Steyerl arranged onto different platforms a series of nine videos in which one could see images resembling to some kind of “vegetal” time-lapse imagery: flowers quickly blossoming and spreading out, plants and bamboo shoots growing in height and width.



Fig. 5a



Fig. 5b



Fig. 5c
Figg. 5a, 5b and 5c. Hito Steyerl, *This is the Future: A 100% Accurate Prediction*, stills from the single channel HD video, color, sound, 16', 2019

What interested Steyerl in the use of neural networks in this installation was the *predictive* nature of machine learning, and the status of “visions of the future” of its imagery: the fact that neural predictive algorithms operate through statistical models and predictions based on immense, “big data” databases, and are therefore related to the vast spectrum of predictive systems (be they financial, political, meteorological, environmental, etc.) that are present in contemporary “control societies”, while at the same time being part of the *longue durée* of the history of prediction systems elaborated by human cultures.

The main video presented in Hito Steyerl’s installation, entitled *This is the Future: A 100% Accurate Prediction*, consists of images produced through a collaboration with the programmer Damien Henry, author of a series of videos entitled *A Train Window*³¹ in which a machine learning algorithm has been trained to predict the next frame of a video by analyzing samples from the previous image, in such a way that, as in a perfect feedback loop, each output image

31 The videos, programmed with Tensorflow, are available at: D. Henry, “A train window”, *Magenta*, October 3rd, 2018, https://magenta.tensorflow.org/nfp_p2p. I thank both Hito Steyerl and Damien Henry for useful information on the coding used in *This is the Future*.

becomes the input for the next step in the calculation. In this way, *after intentionally choosing or producing only the first image*, all the following ones are generated by the algorithm, without any human intervention. In Hito Steyerl's work, this idea of a video entirely made up of images "predicted" by neural networks and located, as the video says, "0.04 seconds in the future", is presented as a new kind of *documentary* imagery: an imagery that can at the same time *predict* and *document* the future, as paradoxical as this may seem. The video begins with white text on a black background that reads: "These are documentary images of the future. Not about what it will bring, but about what it is made of". The next five sections of the video – *Heja's Garden*, *The Future: A History*, *Bambusa Futuris*, *Power Plants* and *Heja's Prediction* – lead us to a psychedelic landscape of images that morph sample images stemming from categories such as "sea", "fish", "flower", "rose" or "orchid": each of them is produced by a neural network that, as the electronic voice accompanying the video tells us, "can see one fraction of a second into the future".

Second Earth (2019) by Grégory Chatonsky takes another route into the iconosphere produced by GAN-driven machine learning. What interests him is the idea of an "artificial imagination", capable of visualizing, through the means of artificial intelligence, "the hallucination of a senseless machine, a monument dedicated to the memory of the extinct human species".³² Himself in charge of the coding which lies at the base of the various elements and the various media mobilized in his work, Chatonsky works in particular on what he calls the "*chaînage*", the "sequencing" of different artificial intelligence systems that, taken all together, produce a whole cascade of new forms: among them, neural networks capable of generating new texts (read by synthetic voices) starting from some given text databases, or capable of generating images from given texts, and texts from given images,

32 See the presentation of *Second Earth*: G. Chatonsky, "Second Earth / Terre Seconde", accessed November 29, 2021, <http://chatonsky.net/earth/>.

with a new kind of AI-powered *ekphrasis*. The metamorphical universe that we see in the videos of *Second Earth*,



Fig. 6a

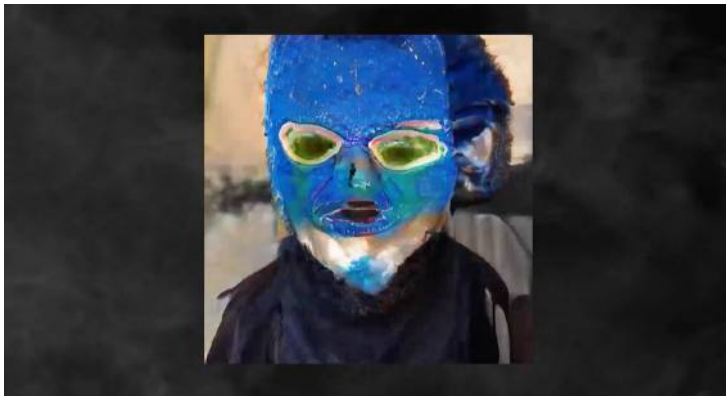


Fig. 6b



Fig. 6c



Fig. 6d
Figg. 6a, 6b, 6c and 6d. Grégory Chatonsky, *Second Earth*, stills from one of the videos in the installation, 2019

a work that Chatonsky presents as an “evolving installation”, evokes the idea of a form-generating power that used to be rooted in nature and which is now taken over by machines which are incorporating and re-elaborating the trillions of

images that humans have uploaded on the internet as a sort of hypertrophic memory. The text accompanying the work reads: “Accumulate data. Outsourcing our memories. Feed software with this data so that it produces similar data. Produce realism without reality, become possible. Disappear. Coming back in our absence, like somebody else”.³³

As products of a “realism without reality”, what Chatonsky calls a “disrealism”,³⁴ the images produced through Generative Adversarial Networks in *Second Earth* do have a hallucinatory, oneiric, “surrealistic” quality, that bears a strange kind of “family resemblance” to the ones that we find in Paglen’s *Adversarially Evolved Hallucinations*, Steyerl’s *This is the Future*, and in the work of other artists who have recently explored the GAN-generated imagery, such as Pierre Huyghe in his installation *Umwelt* (2018). In Chatonsky’s *Second Earth*, these images do refer to some kind of “outer reality”, but the status of this outer reality is highly unclear.

On the one hand, they bear traces of the images contained in the training sets that have been employed in order to activate the GANs: in the cases of the stills from one of the videos in the installation that are here reproduced, such training sets referred probably to categories such as “birds”, “faces”, “eyes”, etc., and the images contained in the training sets – be they actual photographs, or still from videos – do in most cases refer to some profilmic reality.

On the other, extracted as they are from the “latent space” of a process of machine learning in motion from the pole of absolute noise to the pole of a perfect resemblance to the images of the training set, the images of *Second Earth* refer to another kind of reality, one that does not exist yet. We are here in the domain of “anticipation”, rather than “prediction”,³⁵ in the perspective of an explora-

33 G. Chatonsky, *Second Earth*, <http://chatonsky.net/earth/>.

34 Grégory Chatonsky has begun to use and theorize this term in recent lectures held at the Jeu de Paume and at Campus Condorcet in Paris, in the framework of the lecture cycle *L'esthétique à l'heure du pixel* (September 2021 – May 2022) and the seminar *L'image à l'épreuve des machines. Reconfigurations du visible* (25-26 October 2021). See for example “*Le disréalisme (le pixel perdu de l'espace latent)*”, Jeu de Paume, accessed november 29, 2021, <https://jeudepaume.org/evenement/seminaire-esthetique-pixel-1/>.

35 Unpublished conversation with Grégory Chatonsky, 2019, whom I thank for the useful information on the different software used in *Second Earth*.

tion of a non-human “artificial imagination”, rather than in the denunciation of the pervasive presence of systems of control and surveillance, as it was the case in the work of Hito Steyerl. At the basis of Chatonsky’s “Second Earth”, we find the observation that

the machine was becoming capable of automatically producing a phenomenal quantity of realistic images from the accumulation of data on the Web. This realism is similar to the world we know, but it is not an identical reproduction. Species metamorphose into each other, stones mutate into plants and the ocean shores into unseen organisms. The result: this “second” Earth, a reinvention of our world, produced by a machine that wonders about the nature of its production.

Over fifty years ago, in his seminal *Understanding Media. The Extensions of Man* (1964), Marshall McLuhan formulated the idea that art could become, in some decisive historical moments, a form of “advance knowledge of how to cope with the psychic and social consequences of the next technology”, and added that new art forms might become in these moments “social navigation charts”, helping us find some orientation across a sensorium entirely transformed by new media and new technologies. Today, while we witness the first signs of what promises to be a massive impact of artificial intelligence onto all areas of our psychic, social, and cultural life, the works of artists such as Trevor Paglen, Hito Steyerl and Grégory Chatonsky do appear like “navigation charts”: their exploration of the *altered states* of machine vision through the appropriation and the *détournement* of technologies such as the Generative Adversarial Networks help us better understand the aesthetic, epistemological and political implications of the transformations that such technologies are producing within contemporary visual culture. Taken together, they highlight the fact that what is at stake is the very status of what we mean by “image” and by “vision” in the age of artificial intelligence.

Perception, hallucination, virtual reality. From controlled hallucination to *Resident Evil 7: Biohazard*



by Claudio Paolucci

Abstract

In this paper, I will work on the relationship between perception and imagination in Virtual Reality, claiming that “hallucination” is the ordinary motor also for online perception and not only a deviant form of it. First, I will deal with the problem of perception from the point of view of cognitive semiotics and I will try to underline the crucial role of imagination, claiming that perception is a form of “controlled hallucination”. Later, I will focus on the relationship between perception, hallucination, and memory in Virtual Reality. On the one hand, I will claim that Virtual Reality *expresses the transition from actual perception to imagination, memory or dream through another actual perception*. On the other hand, I will claim that it can express it without any problems through the old techniques coming from cinema and other audiovisual languages, since they partially share the very same formal apparatus of enunciation. I will demonstrate all of this by analyzing *Resident Evil 7: Biohazard*.

[Perception](#) [Imagination](#) [Hallucination](#) [Enunciation](#) [Resident Evil](#)

To quote this essay: C. Paolucci, “Perception, hallucination, virtual reality. From controlled hallucination to Resident Evil 7: Biohazard”, *AN-ICON. Studies in Environmental Images*, no. 1 (2022): 112-128

Perception, imagination, and the control of the reality

First, I will deal with the problem of perception from the point of view of cognitive semiotics.¹ I will try to underline the crucial role of imagination, claiming that perception is a form of “controlled hallucination”,² where, by “controlled hallucination”, I mean the product of the imagination controlled by the world. The main idea is that “hallucination” is the model of perception and not a deviant form of it. With “hallucination”, as defined in perception studies and in the neurogeometry of vision,³ I mean the morphological activity of the production of forms by the imagination, which remains crucial both when it is not controlled by the world – as in the case of hallucination, imagination, or dream – and when it is controlled by the world, as in the case of online perception. In Virtual Reality, the world that controls perception is substituted by a technology, a prosthesis capable of creating a strong effect of reality, a simulacrum with an effect of presence that no other audiovisual has ever been able to build.⁴ In Augmented Reality, on the other side, the technology adds elements to the world that controls perception, without a full-blown substitution, as it happens with Virtual Reality.

Maybe, the word “hallucination” can be misleading, since perceptual phenomena under the aegis of hallucination may seem to lose the concreteness that I want to characterize them as having. It is possible that

1 See C. Paolucci, *Cognitive Semiotics. Integrating signs, minds, meaning and cognition* (Berlin-New York: Springer, 2021).

2 See A. Clark, *Surfing Uncertainty: Prediction, Action, and the Embodied Mind* (Oxford: Oxford University Press, 2016); J. Koenderink, “Vision and information”, in L. Albertazzi *et al.*, eds., *Perception Beyond Inference: The Information Content of Visual Processes* (Cambridge, MA: MIT Press, 2010): 27-57.

3 See J. Koenderink, “Vision and information”; A. Sarti *et al.*, “The symplectic structure of the primary visual cortex”, *Biological Cybernetics* 98 (2008): 33-48.

4 See C. Paolucci, “Una percezione macchinica: realtà virtuale e realtà aumentata tra simulacri e protesi dell’enunciazione”, in F. Biggio *et al.*, eds., *Meaning-Making in Extended Reality. Senso e Virtualità* (Rome: Aracne, I Saggi di Lexia, 2020): 43-62.

“figuration” would fit better with the ideas I will develop here, since no Sartrean “derealization” is involved.⁵ However, since our brains try to guess what is out there, and to the extent that that guess matches the evolving sensory data, we perceive the world, in *Surfing Uncertainty*, Clark recalls the slogan coined by the vision scientist Ramesh Jain that perception is “controlled hallucination”. This is the direction I am going to take. But, precisely because “this view of perception puts us in genuine cognitive contact with the salient aspects of our environment”, Clark suggests we consider hallucination as a form of “uncontrolled perception”.⁶ However, Clark’s view – if it is put like that – is the classical one that thinks of perception as grounding both hallucination and imagination, which are supposed to be “deviant” or “uncontrolled” forms of perception. Since I want to claim the opposite, I will continue to use “hallucination”, and since there is a well-established tradition regarding this concept in the field of perception studies, I will do so with the caveat that “hallucination” does not imply any kind of “derealization” of perceptual phenomena from a phenomenological point of view.⁷

Indeed, with “hallucination”, or “figuration”, I indicate a process of microgenesis⁸ that continuously produces the next thread of perceptual experience while the current one fades, and does so without voluntary control.⁹ I claim that meaning guides this microgenesis, or hallucination, and that imagination is the engine of this microgenesis guided by meaning.

5 See G. Matteucci, *Estetica e natura umana. La mente estesa tra percezione, emozione ed espressione* (Rome: Carocci, 2019).

6 A. Clark, *Surfing Uncertainty*: 326. See also paragraph 6.10.

7 See S. Gallagher, D. Zahavi, “Primal impression and enactive perception”, in V. Arstila, D. Lloyd, eds., *Subjective Time: The Philosophy, Psychology, and Neuroscience of Temporality* (Cambridge: MIT Press, 2014): 83-99.

8 See J.W. Brown, *Self-Embodying Mind: Process, Brain Dynamics and the Conscious Present* (Barytown, NY: Barytown Ltd, 2020)

9 See J. Koenderink, “Vision and information”.

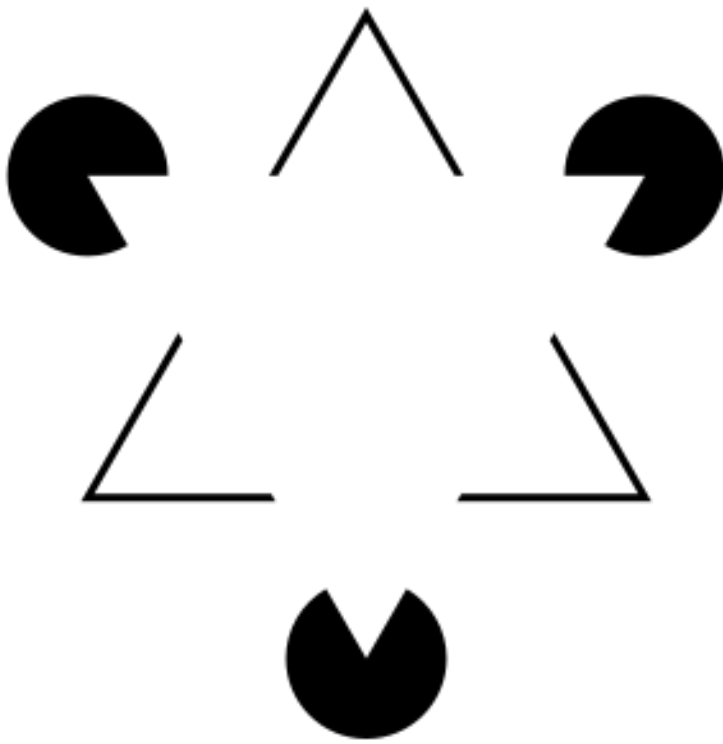


Fig. 1. Kanizsa's triangle.

For instance, in Kanizsa's triangle (Fig. 1), the triangle is totally a product of our hallucination, since it is the only thing that is not present in the stimuli. It is not by chance that, as Reddy and colleagues show, not only are online perception and imagination closely related in the brain, but perception, as it occurs in creatures like us, is co-emergent with imagination.¹⁰ What we perceive is literally (not metaphorically) the future, not the present, because perception is the anticipation of the next thread of sensory information through previous knowledge. Indeed, in perception we build through imagination the world that we expect.

There is a beautiful experiment by Adams and colleagues that shows that, in some circumstances, we hear the presence of the absence, that is, we hallucinate something that is not there, but we expect to be there.¹¹ When silence arrives, we literally do not hear it as we are supposed to do (i.e. as nothing playing). In its place, we hear the presence of the absent sound that we were

¹⁰ L. Reddy *et al.*, "Reading the mind's eye: decoding category information during mental imagery", *NeuroImage* 50, no. 2, (2010): 818-825; G. Ganis *et al.* "Brain areas underlying visual mental imagery and visual perception: An fMRI study", in *Cognitive Brain Research* 20, no. 2 (2004): 226-241.

¹¹ R.A. Adams *et al.*, "Predictions not commands: active inference in the motor system", *Brain Structure and Function* 218, no. 3 (2013): 611-643.

expecting. Adams and colleagues' experiment runs as follows. They used a simple computer simulation of birdsong. A multi-layer prediction machine processes sequences of simulated bird-chirps. The simulations were then repeated but omitting the last three chirps of the original signal. At the first missing chirp, the network responds with a strong precise moment where the first missing chirp should have occurred, the system generated a brief, transient illusory percept. This hallucinated percept was not strong, but the timing was correct with respect to the missing chirp. Thus, our perceptive system first dimly "perceived" (hallucinated) the missing chirp, before responding with a strong error signal when the actual absence of the anticipated sensory evidence became apparent. Of course, Kanizsa's triangle is a visual correspondent of Adams and colleagues' experiment. This is what I call perception as a "controlled hallucination", which is the general functioning of our rich, world-revealing perception at any level, since it concerns an organism structurally coupled with its environment trying to minimize disorder and surprise.¹²

The Goethean account of perception

I refer here to what Jan Koenderink, a cognitive scientist and mathematician who works on the connection between theory of singularities and perception, used to call the "Marrian" and the "Goethean" accounts of perception.

- According to the Marrian account: perception is the result of standard computations on optical data.
- According to the Goethean account: perception is controlled hallucination, or "controlled figuration".

The mainstream view in cognitive science and neuroscience, which is often also the commonsense view,

¹² S. Gallagher, *Enactivist Interventions: Rethinking the Mind* (Oxford: Oxford University Press, 2017).

is that perception is all about a kind of passive imprinting of the world upon the sense organs and the brain. As Egner and colleagues say, “on traditional accounts the visual system was seen as a passive analyzer of bottom-up sensory information”.¹³ This is a view of the perceiving brain as highly stimulus-driven, taking energetic inputs from the senses and turning them into a coherent percept by a kind of inwards flowing stream.

The Predictive Processing account of perception takes a different direction and includes a top-down predictive aspect in its account.¹⁴ However, Predictive Processing thinks of perception as a kind of new schematism between aesthetics (the sensory data) and the concepts (the priors). According to this view, our brains are proactive: they are constantly buzzing as they try to predict the sensory signals arriving across all modalities. When such proactive brains “match” the incoming sensory signal, we perceive the world, understand it, and are immediately positioned to imagine it so as to act in it too. However, “hallucination” is different from the mainstream notion of “prior”. A prior – as used in Bayesian inference – is a generic, usually statistical, property.¹⁵ For example,

light comes from above is such a prior (if put in suitable format). It applies, on the average, for terrestrial animals that live in open spaces. Such priors package ‘frozen’ prior experience as it were. ‘Hallucinations’ differ by not being frozen, applying to the actual situation. Hallucinations can be regarded as specific, necessarily tentative, instantiations of the observer’s present “situational awareness” instead of its average past.¹⁶

13 T. Egner *et al.*, “Expectation and surprise determine neural population responses in the ventral visual stream”, *Journal of Neuroscience* 30, no. 49 (2010): 16601-16608.

14 See A. Clark, *Surfing Uncertainty*.

15 D. Purves, “Why we see things the way we do: evidence for a wholly empirical strategy of vision”, *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences* 356 (2001): 285-297.

16 J. Koenderink, “Vision and information”: 32.

This is important, because we do not always update our perceptions according to our past experience and according to the changes in our priors. This is very well seen in the popular Muller-Layer illusion, where even when we learn that the two lines have the same length, we still keep on seeing them in the previous way. In perception, “data” are constructed through an attunement of the organism and the world, where the organism looks for elements that are worth for him to look for. For instance, as in Kanizsa’s triangle, we look for edges and we perceive edges even if edges are the only thing that are not present in the stimulus. This is because, given evolutionary pressure and experience driven plasticity,

we are wired to the environment in order to produce states that track edges when exposed to discontinuities. The system is physically attuned to such things, ‘set up to be set off’ by such visual discontinuities.¹⁷

Exploring the world, the organism casts his questions to the environment through imagination and predicts its answers until he encounters resistance. This very action turns optical or sound structure into “data”, which are not sent from the world to the organism through senses but are the actual product of the autopoietic structure of the system of perception. Perception occurs when the top down activity of the imagination succeeds at generating the sensory data for itself, building a coherent story that paves the way for efficacious action. When it can generate the future sensory data, the agent perceives the world. When it cannot, encountering a resistance, it tries a new attunement or changes the world through action. Therefore, data are built up because we produce them in looking for what we need for action, in order to minimize our work in the environment.

17 S. Gallagher, *Enactivist Interventions*: 120.

Moving towards virtual and augmented reality

The difference between the mainstream view, where data are sent by the environment and processed through perception, and the view where they are the product of what we look for in a coupled environment, can be operationalized as follows: perception is sensorily guided potential behavior.¹⁸

Potential is key here. Perception is grounded on imagination, as it concerns the potential behavior connected to a coherent “story” we are building in order to act in the world and minimize disorder.¹⁹

Perception as sensorily guided potential behavior is meant to reveal a world of salient, meaningful, interacting causes selected in the light of human needs and possibilities, which is exactly what pragmatists had in mind when they were telling us that the meaning of something consists in its conceivable practical bearings. This also marks the difference between pragmatism and behaviorism, since perception is neither action nor behavior. This pragmatist idea is consistent with the Affordance Competition Hypothesis originally introduced by Cisek,²⁰ which is also a key hypothesis for the Predictive Processing by Andy Clark.²¹ The brain processes sensory information to specify, in parallel, several potential actions that are currently available. These potential actions compete against each other

18 J. Koenderink, “Vision and information”: 32.

19 C. Paolucci, “Social cognition, mindreading and narratives. A cognitive semiotics perspective on narrative practices from early mindreading to autism spectrum disorders”, *Phenomenology and the Cognitive Sciences* 18, no. 2 (2019): 375-400; and *Cognitive Semiotics. Integrating Signs, Minds, Meaning and Cognition* (Berlin, Heidelberg, New York: Springer, 2021).

20 P. Cisek, “Cortical mechanisms of action selection: The affordance competition hypothesis”, *Philosophical Transactions of the Royal Society B* 362 (2007): 1585-1599.

21 A. Clark, *Surfing Uncertainty*: Chapter 6.

for further processing, while information is collected to bias this competition until a single response is selected.²²

If we go beyond Cisek's terminology of "processing information", like I think we have to do in order to focus on the main problem of perception as controlled hallucination, we see that, at the moment, we are seeing a good deal of confirmation regarding this "pragmatist" approach from the neurosciences.²³ The classic distinction between perception, cognition and action simply fails to reflect not only the phenomenology of our experience, but also the global functional architecture of the brain, where, for instance, motor systems are active and play a huge part also in perception, decision making, social cognition and problem solving.²⁴

Increasing and highly suggestive evidence challenges the view of core cognitive capacities (such as planning and deciding) as neurophysiologically distinct from the circuitry of sensorimotor control. For example, decisions concerning eye movements and the execution of eye movements recruit highly overlapping circuits in lateral intraparietal area (LIP), frontal eye fields (FEF), and the superior colliculus [...]. In the same vein, a perceptual decision task (one in which the decision is reported by an arm movement) revealed marked responses within premotor cortex corresponding to the process of deciding upon a response (Romo et al. 2004). Quite generally, wherever a decision is to be reported by (or otherwise invokes) some motor action, there looks to be an entwining

22 P. Cisek, "Cortical mechanisms of action selection": 1585.

23 See C. Paolucci, "Per una concezione strutturale della cognizione: semiotica e scienze cognitive tra embodiment ed estensione della mente", in M. Graziano, C. Luvèra, eds., *Bioestetica, bioetica, biopolitica. I linguaggi delle scienze cognitive* (Messina: Corisco Edizioni, 2012): 245-276; V. Cuccio, F. Caruana, "Il corpo come icona. Abduzione, strumenti ed Embodied Simulation", *VS-Quaderni di Studi Semiotici* 120 (2015): 93-103.

24 See V. Gallese, "Mirror neurons and the neural exploitation hypothesis: from embodied simulation to social cognition", in J.A. Pineda, ed., *Mirror Neuron Systems* (New York: Humana Press, 2009): 163-190; A.M. Borghi, F. Caruana, "Embodied Cognition, una nuova psicologia", *Giornale Italiano di Psicologia* 35, no. 1 (2013): 23-48; V. Gallese et al., "A unifying view of the basis of social cognition", *Trends in Cognitive Sciences* 8, no. 9 (2004): 396-403; G. Rizzolatti, C. Sinigaglia, "Mirror neurons and motor intentionality", *Functional Neurology* 22, no. 4 (2007): 205-221.

of perceptuo-motor processing and decision-making, leading Cisek and Kalaska to suggest that ‘decisions, at least those reported through actions, are made within the same sensorimotor circuits that are responsible for planning and executing the associated action’ (Cisek and Kalaska 2011: 274). In cortical associative regions such as posterior parietal cortex (PPC), Cisek and Kalaska go on to argue, activity does not seem in any way to respect the traditional divisions between perception, cognition, and action. Instead we find neuronal populations that trade in shifting and context-responsive combinations of perceiving, deciding, and acting, and in which even single cells may participate in many such functions (Andersen and Buneo 2003).²⁵

If perception is supposed to work as a process that is continuous with action, the Marrian casual chain is inverted. Instead of “data” arriving at the eye, being processed, being further processed and finally resulting in a “representation” of the scene in front of us, the agent explores the world in any conceivable direction, casting his questions and producing data in relation to what he needs for action, until it encounters resistance.

This is why *imagination is the real engine for online perception*. Since imagination is a faculty that allows us to move our consciousness from a proximal to a distal place, which can be in the past (memory), future (prospects) or in an invented reality, this “looking for the future” in online perception, trying to anticipate the next thread of the world, is grounded exactly on imagination.

This places Virtual Reality and Augmented Reality (VAR) in radical continuity with online perception. Indeed, if, in phenomenological terms, hallucination is a “perception in the absence of the external object”, and if the objects that appear in virtual reality are artificial simulacra of presence that we perceive without them being anchored in

25 A. Clark, *Surfing Uncertainty*: 178.

our experience of the physical world, we shall understand immersive virtual experience as a form of voluntary and deliberate hallucination. But this does not imply any kind of derealization: it simply implies the substitution of the control of the world with the control of a technology.

This is why VAR promises important scientific applications, which, in a few years, will radically change many of our laboratories of psychology, neuroscience and cognitive sciences. Indeed, on the one hand, we want a world in which reality is not so “real” as to modify the experimental results and influence them, and VAR provides us with only a virtual reality, which can be controlled in detail and put into brackets at will. On the other hand, we also want a world that is not so unreal as to be indistinguishable from the normal conditions of a laboratory, which at full capacity lives by cutting off every variable that cannot be controlled and ends up producing data that have the purpose of explaining our experience in a condition that we know to be a radical impoverishment of this very same experience. VARs allows us to create a very strong effect of presence within a world-environment,²⁶ capable of simulating a reality that remains only virtual and can therefore be controlled in its different parameters. At the same time, VAR allows us to increase the “gradient of reality” inside a laboratory, integrating those experiences and variables that a laboratory usually tends to cut away, in the name of the robustness of its measurements. Thus, the conditions of the laboratory are “augmented” with a reconstructed and simulated reality, which we can see and experience only thanks to the prostheses of VAR. In this respect, VAR is a prosthetic technology that is in its own way unprecedented, capable of generating a controllable world without losing at the same time the phenomenological richness of *the* world.

26 A. Pinotti, “Self-negating images: towards an-iconology”, *Proceedings 2017*, I, 856 (2017).

Precisely because of its ability to make the world present through perception, without the world being in any way unamendable – since it can be controlled – it is completely normal that people who set up environments in VAR exploit this possibility, preferring online perception to other expressive possibilities and using online perception in order to express dreams, hallucinations or memories. However, this choice does not in any way reside in a technological, semiotic or enunciative limit of VAR and its language. On the contrary, it is only a “stylistic” choice, which can be suspended. As we will see, many of these suspensions, which result in the use of old cinematographic techniques within Virtual Reality, can be seen for example in an extraordinary game for Play Station VR such as *Resident Evil 7: Biohazard*.

Elsewhere,²⁷ I tried to show how, from a semiotic point of view,²⁸ VAR works by holding together a formal apparatus of the prosthetic type of enunciation, typical of audiovisuals, and a formal apparatus of enunciation of the simulacral type, which is instead typical of other semiotic systems, such as verbal language.²⁹ If this is true, as I believe it is, Virtual Reality and Augmented Reality are *not* incapable of effectively representing the modifications of perception that cinema has always expressed through its representative strategies, such as dissolve, shift from

27 C. Paolucci, “Una percezione macchinica”.

28 Some semiotic approaches to VR can be found in G. Bettetini, *L’Ulisse semiotico e le sirene informatiche* (Milano: Bompiani, 2006); and B.R. Barricelli *et al.*, “Semiotic Framework for Virtual Reality Usability and UX Evaluation: a Pilot Study”, in M. De Marsico *et al.*, eds., *Games-Human Interaction* (2018): 1-6. A nice take on the illusory cancellation of the distance that occurs during an immersive experience and the establishment of a critical distance in the user, linked to the emergence of a meta experiential competence, can be found in F. Biggio, “Semiotics of distances in virtual and augmented environments”, *Img Journal* 2, no. 3 (2020): 82-103. Some important remarks on virtuality and subjectivity can be found in a nice book by Ruggero Eugeni, *La condizione postmediale* (Brescia: La scuola, 2015) and in the reader edited by F. Biggio *et al.*, *Meaning-Making in Extended Reality. Senso e Virtualità* (Rome: Aracne, 2020). However, the most comprehensive and original semiotic work on this topic is the PhD thesis by Gianmarco Giuliana, *Meaningfulness and Experience in Virtual Realities. Semiotics of a Digital Pla(y)typus*, University of Turin (2021).

29 See C. Paolucci, “Prothèses de la subjectivité. L’appareil formel de l’énonciation dans l’audiovisuel”, in M.G. Dondero *et al.*, eds., *Les plis du visuel. Réflexivité et énonciation dans l’image* (Limoges: Éditions Lambert-Lucas, 2017): 53-68.

color to black-and-white, *flo* or blur, used to indicate, in a point-of-view shot, the transition from actual perception to memory, dream, daydream, fantasy, or hallucination. VAR can use all these techniques without any problems at all, since it shares with cinema and audiovisual languages the very same formal apparatus of enunciation. We can have a dissolve or a shift from color to black-and-white also in VAR. If this is not done, or it is not done so often, it is only because of a choice from the “authors” or the VAR, who clearly opt for a “pan-perceptive way” for stylistic or “aesthetical” reasons.

But this does not mean that VAR cannot express non-perceptive conditions such as memory, dream, daydream, fantasy, or hallucination. On the contrary, it does that through perception, perfectly expressing the transition from actual perception to memory, dream, daydream, fantasy, or hallucination in a “pan-perceptive” way. Indeed, *Virtual Reality expresses the transition from the actual perception through the actual perception*. And sometimes it incorporates the old audiovisual techniques, embodying them inside this transition from perception through perception.

A conclusion in the form of a case study. *Resident Evil 7: Biohazard*

As a case study, I will work here on *Resident Evil 7: Biohazard*, a survival horror game for PS4 developed by Capcom. The game, which can be played through Play Station VR, is full of shifts from actual perception to memories, dreams, and hallucinations. All these shifts are expressed through pure perception, while incorporating from time to time some techniques originating from cinema or audiovisual languages.

Resident Evil 7: Biohazard is set somewhere in the southern United States, after the murder of a three-man

TV crew by the infected Baker family members Jack and Mia. Ethan Winters is the protagonist, who is searching for his missing wife, Mia, which leads him to a derelict plantation mansion, home of the Baker family. At the very beginning of the story, the player, in the role of Ethan, finds a videotape containing a short video shot by the television crew and, in an adjacent room, he also finds a VCR and a TV where he can see it. Notice how the videotape is a “technological quotation”: it is through an old audiovisual that we come to know what happened in the past,³⁰ now that we are in VR. The player has some expectations at this point:³¹ we know that a TV crew has been there before us, because we have previously explored their abandoned van. However, the narration of this flashback, which also gives the player important information on the topography of the house, takes place by giving the player control of one or three crew members, not surprisingly the cameraman, who must film what happened previously and return it to the eyes of the player, who is controlling him through his joypad. Here the flashback and the memory, in a form that clearly identifies that they are flashbacks and memories, are obtained through the perception of a “machinic” eye that was there, watching for us. And who now identifies with us and our avatar.³²

The very same thing happens when the player controls Mia Winters, in the central part of the plot. Mia hallucinates (we will understand later that she has been infected and her mind is controlled by Eveline) and sees a 10-year-old girl who tells her to watch another videotape, “so they can be a family”. The videotape introduces

30 According to Kirkland, in the Resident Evil saga “old media technologies contribute a sense of the real perceived as lacking in digital media, yet central to a generically-significant impression of embodiment”. See E. Kirkland, “Resident Evil’s typewriter: horror videogames and their media”, *Games and Culture* 4, no. 2 (2009).

31 On the way the Resident Evil saga handles expectations of its players, see C. Reed, “Resident Evil’s rhetoric: the communication of corruption in survival horror video games”, *Games and Culture* 11, no. 6 (2016).

32 <https://www.youtube.com/watch?v=SBsOqYpx2ng&t=1550s>

a memory through which we learn that Mia was a scientist, taking care of a bioweapon under the form of a little girl, but something went wrong. Once again, it is through actual perception that memories and hallucinations are performed. It is through perception that Virtual Reality expresses the transition from actual perception. Controlling Mia Winters, playing through her and perceiving through her eyes and ears, we come to know the truth about the story that we are playing as Ethan Winters, to the point that one of our aims is to send Ethan (ourselves) the very same message we receive when *Resident Evil 7: Biohazard* starts.³³

However, the main moments connected to the relationship between perception, memories and hallucination in Virtual Reality are still to come in *Resident Evil 7*. At a certain point of the plot, Ethan meets Jack Baker's daughter, Zoe, who also wants to escape Baker's house. Zoe tells Ethan that his wife Mia is still alive, even if Ethan (us) has already killed her, since Mia has been given the very same infection the Bakers have, and this infection gives her body powerful regenerative abilities and extreme mutations. Ethan is told that she and Mia would need to have their infections cured by a special serum first, before leaving Baker's house. Ethan heads out to an old house to find the ingredients for the serum, where he is forced to battle and kill Marguerite Baker. Once he retrieves the ingredient, Ethan begins to have strange visions of a young girl. From this point on, hallucinations, memories and perceptions coexist and alternate in all the *Resident Evil 7* gameplay and VAR has no problems at expressing their development throughout the whole story at all, using the very same techniques that audiovisual languages used to employ.

For instance, in the final boss fight, Ethan perceives the world through a grayish film and sees Eveline

³³ See a complete walkthrough of this part of the game here: <https://www.youtube.com/watch?v=Gh3CkPI0UpA>

in her 10-year old girl form, that we know being nothing else but a hallucination, since we are told thanks to the Nexbas document found in the salt mines that

almost immediately after the infection, the subject begins to see images of Eveline (though she is not in fact there) and even hear her voice (which is inaudible to anyone else). Auditions with infected subjects throughout the stages of infection reveal that at first, the phantom Eveline appears to be a normal young girl, sometimes desiring companionship or assistance.

However, after being able to approach her and inject the toxin that we have previously synthesized in the neck, we see an explosion of light flood the screen and then dissolve, indicating the transition from actual perception, that is hallucination, to real online perception. Indeed, when dissolve and blur fade, the girl we are holding in our arms reveals herself to be an old monstrous lady whom we have already met (Baker's "grandmother" in the wheelchair), that melts into the ground in a colorful scenario (not greyish as before), telling us "why does everybody hate me? I just wanted a family".³⁴ In her actual form she attacks the player, giving birth to the final boss fight.

Memories make no exception and are expressed perfectly fine (like hallucinations are) in Virtual Reality. For instance, immediately before, the player is told the true story through the reliving of a painful memory by Mia while he is exploring the house. While we are perceiving the actual scene in the house and after we have found a doll on the ground close to a wheelchair (foreshadowing Eveline's true identity), we hear a buzz sound that indicates a clear discontinuity and Mia shows up in our perceptive field without interacting with us nor seeing that we are there.

³⁴ The whole sequence can be seen here: <https://www.youtube.com/watch?v=Rs8bkVhDuA0>

What we see is a memory by Mia, while she was taking care of Eveline, the E-Series Biohazard weapon (E-001) built by the company she was working for (a common appearance was selected for the bioweapons; that of a roughly 10-year-old girl, to ensure ease blending in with urban population). It is through these memories perceived through Virtual Reality that we come to know that Eveline infected Mia because she wanted Mia to be her mother. Immediately later, we are inside that memory, we can interact with it and we are part of its compound: indeed, Eveline asks us to be her father (“and if he does not want to be my father, he can die”) and we ask ourselves “why am I seeing this?”.³⁵

As we see, VAR has no problems at all at in using all the classic audiovisual techniques in order to express the transition from online perception to memory, dream or hallucination. It simply prefers doing that the majority of the time through its pan-perceptive model. However, not only can VAR utilise the old audiovisual techniques, but it looks like that also the old audiovisual languages used to express hallucinations, memories and dreams through perception: they simply did not give the observer the sensation of “being there”. How could cinema express memory, dream or hallucination through dissolve, blur or *flo* if not through perception? Since both cinema and VAR share the very same prosthetic structure of their formal apparatus of enunciation, they both use a prosthesis (a screen, a mounted display etc.) in order to make us see things that we could not have seen without the text.³⁶

In this way, from a semiotic point of view, VAR confirms its mixed nature, keeping together a simulacral and a prosthetic structure of its language.

³⁵ See the whole sequence at <https://www.youtube.com/watch?v=p7TZk2iYM-k>

³⁶ C. Paolucci, *Persona. Soggettività nel linguaggio e semiotica dell'enunciazione* (Milano: Bompiani, 2020): Chapter 6.

Cinematic darkness: dreaming across film and immersive digital media



by Martine Beugnet and Lily Hibberd

Abstract

As with films previously, claims are being made today about the capacity of immersive environments, including virtual reality, to offer viewers or experiencers effective simulations of altered states of consciousness. In this article, we look anew at the enduring question of time-based mechanical (lens based and digital) media's ability not merely to take us outside of or besides ourselves, but to generate an imaginary realm of their own. Our analysis centres on the use of darkness. Often associated with the passage from one state of consciousness to another, darkness has become a prevalent aesthetic in cinematic immersive media. In some ways, as we will see, the latest technologies of audio-vision appear less apt than conventional cinema to induce us to "cross the bridge" and venture into the land of phantoms. In others, they emerge as privileged entries into the dreamlike worlds of our contemporary, technologized era. In spite of differences in viewing conditions, we find that between the older medium of 2D film and that of cinematic virtual reality, darkness, combined with the illusion of depth and visual replication of motion proves to be a particularly potent harbinger of altered states.

[Cinema](#)

[Darkness](#)

[Spectatorship](#)

[Dream](#)

[Consciousness](#)

To quote this essay: M. Beugnet & L. Hibberd, "Cinematic darkness: dreaming across film and immersive digital media", *AN-ICON. Studies in Environmental Images*, no. 1 (2022): 129-152

(...) spectators at the exit, brutally rejected by the black belly of the theater into the glaring and mischievous light of the lobby, sometimes have the bewildered expression (happy and unhappy) of people waking up. To leave the movies is a little like getting up: not always easy.¹

Introduction: cine-obscurity

Darkness is dream's natural associate. It is no wonder audiovisual works that seek to transport us beyond the here and now of awakened reality continue to rely on the power of darkness to enfold us and to unravel our sense of place and time. Though there are structural differences between the aesthetics and spectatorship of cinema and that of virtual reality, darkness functions across many media forms as both a metaphor and as a corporeal device for immersion, encouraging spectators and participants to submit to imaginary realms.

The scope of this article is not to review the wider lineage of darkness across immersive forms of media, or indeed to revisit their origins going back to Plato's cave. The media archaeology of moving images and obscurity has already been done by theorists such as Oliver Grau, and in groundwork of Siegfried Zielinski and Gloria Custance, who described the cinema as a dark "womb".² Other media theorists have delineated the parameters of interactive or immersive 3D viewing, most notably Maria Engberg and Jay Bolter on virtual reality aesthetics, as well as William

1 C. Metz, A. Guzzetti, "The fiction film and its spectator: A metapsychological study", *New Literary History* 8, no. 1 (1976): 75-105, 86.

2 O. Grau, *Virtual Art: From Illusion to Immersion*, trans. G. Custance (Cambridge, MA: MIT Press, 2003): 151-152. S. Zielinski, G. Custance, *Audiovisions: Cinema and Television as Entr'actes in History* (Amsterdam: Amsterdam University Press, 1999): 92, 246.

Brown with the notion of “gaseous perception” in relation to stereoscopic cinema and darkness.³

In contrast with earlier theorizations, in what follows we focus on adaptations of cinematic immersive reality in the hands of artists and experimental filmmakers. To further account for the contemporary emergence of an aesthetic of darkness we firstly seek to establish a historical backdrop. We then turn our attention to the works and, where available, the words of the creators’ themselves, as we consider four recent immersive media works imbibed in darkness: Anouk De Clercq’s *Thing*, Laurie Anderson and Hsin-Chien Huang’s *La camera insabbiata/Chalkroom*, *Notes on Blindness: Into Darkness* and *Parragirls Past, Present: Unlocking Memories of Institutional “Care”*. As immersion in darkness is closely related to dreamworlds and to dreams of outer space, these phenomena provide the underpinning rationale in the first half of this article and for our subsequent analysis of these four works.

Enfolding darkness, from awakened dreaming to altered states

Amongst the most memorable scenes of F.W. Murnau’s *Sunrise* (1927) is the imaginary screening in which a seductress from the city appears to lure a naïve country man into a fantasized vision of urban life. One evening, as they sit together on the shore of a lake, the woman launches into an eloquent description of nightlife in the city. To demonstrate the impression made by her tale, Murnau materializes it in the form of a projection that magically appears in front of the two characters. Thanks to an astute system of transparencies, the dream show of the modern city superimposes itself onto the nocturnal sky, under the halo of a fake moon that

³ M. Engberg, J.D. Bolter, “The aesthetics of reality media”, *Journal of Visual Culture* 19, no. 1 (2020): 81-95. W. Brown, “Avatar: stereoscopic cinema, gaseous perception and darkness”, *Animation* 7, no. 3 (2012): 259-271.

glows like the lamp of a projector.⁴ Stylized cityscapes alternate with kaleidoscopic, blurry visions of frenzied revelry: there is no attempt at harnessing this fantastic vision to a specific or stable point of view. The fantasy may originate in the female character's mind, but it feeds on a collective imaginary, and the projection allows her to share it with her companion, as well as beyond the diegesis, with the audience of Murnau's film. The sequence is a celebration of the powers of the cinema not merely as a "factory of dreams", but also as a sharing of the experience of dreaming itself.

Dreams and daydreams, hallucinations and memories, as the products of the human psyche, fascinate not only because they elude our self control (we can no more prevent or design our nightmares at will than we can consciously erase a memory), but also because they confound our capacity to communicate and share experiences. In every medium, from literature to the theatre, painting and photography, techniques have been developed to evoke altered states of consciousness. The gap, however, between the viewer or reader and the subjective creations of the psyche mediated by objective, external sources, is not easily bridged. Key to *Sunrise's mise en abyme* of a screening is the choice of a nocturnal setting: in a film theatre the night on screen blends with the darkness that surrounds the cinema spectator like a connecting tissue.

Because the visibility of the projected film image initially relied on a beam of light, darkness – also the companion of sleep and dreams – has been associated with the cinema from the start. With the shift from analogue to digital, the glow of the LCD monitor has increasingly complemented the light beam of the projector, alongside other self-illuminating screens found in the domestic environment. Regardless of location, we still lower the lights while watching films whenever possible. More than a mere

4 M. Beugnet, *L'attrait du flou* (Crisnée: Yellow Now, 2017): 33-34.

condition of visibility, obscurity facilitates the slipping in and out of total awakened awareness.

Film was the first medium to offer the promise of more than the mere representation of our imaginings – to engender a form of awakened dreaming through spectacle and apparatus. The increasingly photorealistic quality of cinematic images and sounds set in motion guaranteed the “credibility of its fabrications”.⁵ A spectator could hope to become immersed in a film in a manner similar to the dreamer, who experiences even the most absurd world of mental images equally as “real” as daily life occurrences, or of a daydreamer who indulges in memories or fanciful imaginings to the point of forgetting their actual surroundings. The conditions of reception in the cinema auditorium came to reflect and strengthen the analogy: cut off from the outer world, plunged in darkness and silence, with limited physical activity, at the end of a screening the spectator often emerges as if they were awakening.

Yet in spite of the unequalled ability to blur the frontier between representation and perception,⁶ the fusion of image and reality never occurs fully.⁷ As Christian Metz reminds us, where in deep sleep the dreamer does not know that they are dreaming, film induces, at best, a semi-wakeful state: more than dream per se, the experience of watching a film (which can be emulated, though imperfectly, in individual situations of viewing) resembles that of reminiscing,

5 C. Metz, A. Guzzetti, “The fiction film and its spectator: A metapsychological study”, *New Literary History* 8, no. 1 (1976): 75-105.

6 S. Sharot, “Dreams in films and films as dreams: surrealism and popular American cinema”, *Canadian Journal of Film Studies* 24, no. 1 (2015): 66-89. Also, on the myth of the credulous audience, see T. Gunning, “An aesthetic of astonishment. Early film and the (in)credulous spectator”, *Art and Text*, no. 34 (1989): 31-45.

7 In contrast, “dreaming is subjectively indistinguishable from waking experience”. See T.K. Metzigner, “Why is virtual reality interesting for philosophers?”, *Frontiers in Robotics and AI*, no. 5 (2018).

fantasizing or slipping into reverie. For Raymond Bellour, it is better compared with a form of hypnosis.⁸

Nonetheless, fascination for the medium's oneiric qualities has driven some of the most radical and creative practices and theorizing of the medium. The representation of dreams themselves has had little to do with this evolution: from Antonin Artaud and the surrealists to Jean Epstein, the earliest avant-gardes nurtured the belief that the medium's aesthetic potential laid not in the representation of dreams or reminiscences, but in the possibility to dream or reminisce *with* images.⁹ In classic cinema however, as in avant-garde or experimental filmmaking, darkness and immobility remain the spectator-dreamer's first allies.

In *The Absent Body*, Drew Leder observes that in normal situations of perception the awareness of our body diminishes: the reason we can focus on what we watch, or concentrate on what we touch, is that we do not pay attention to the actual process, nor to the eye or hand involved in it.¹⁰ A similar receding of bodily awareness occurs when we are absorbed in our own thoughts. Such "absenting" of the lived body is not however "equivalent to a mere void, a lack of being".¹¹ Rather, it testifies to the extent in which a sentient subject might be beside itself, "ecstatically caught-up in the world":

the very nature of the body is to project outwards from its place of standing. From the "here" arises a perceptual world of near and far distances. From the "now" we inhabit a meaningful past and a futural realm of projects and goals.¹²

8 R. Bellour, *Le Corps du cinéma: hypnoses, émotions, animalités* (Paris: POL / Trafic, 2009).

9 J. Epstein, *Écrits sur le cinéma*, vol. 2 (Paris: Cinéma Club/Seghers, 1975): 18-20. Also see, A. Artaud "Cinéma et réalité", *Œuvres complètes*, vol. 3 (Paris : Gallimard, 1978): 19; and M. Beugnet, *L'attrait du flou* (Crisnée: Yellow Now: 2017): 82-83.

10 A. Leder, *The Absent Body* (Chicago: Chicago University Press, 1990): 70-71.

11 Ibid.: 22.

12 Ibid.: 23.

Leder's description of this phenomenon recalls James Gibson's theory of "affordance", according to which individuals are entwined with their surroundings, their prospective actions informed by the constant collecting of information from their environment.¹³ This capacity to feel or to picture our bodies outside or alongside themselves in time and space is an equally fundamental feature of dreaming, hallucination and reverie, as well as the fabrication of their similitude in movies. Indeed, it is often the altered sense in which our body appears to relate to its perceived environment (feeling one's bodily affordance hindered, distorted or augmented in turns) that marks the difference between awakened and dreamlike states.

In the cinema, the body's capacity for *ecstasis* is simultaneously enhanced and directed away from the immediate environment, towards the virtual world that appears on the screen. The film auditorium, as a space, has sometimes been compared to a womb.¹⁴ Darkness engulfs the barely moving spectators, allowing them to be together and alone at once, to ignore the borders of the screen as they recede in the obscurity. Within the secluded space of the theatre, the light originating from behind the audience trains spectators to project themselves on the screen, to situate themselves within the perspectival view of the spaces offered to the eye, and the anthropomorphic quality of the camera's gaze that explores them. From the 1950s onwards, anamorphic lenses widened the frame, and shortened the optical depth of field, with a corresponding increase in visual blur effects. Strengthening the sense of immersion and bringing the cinematic closer to the human field of vision, the blurring of the margins of the visual frame also subtly blended the projected image into the surrounding

13 J.J. Gibson, *The Ecological Approach to Visual Perception* (Boston: Houghton Mifflin, 1979).

14 T. Elsaesser, "Cinephilia or the uses of disenchantment", in M. de Valck, M. Hagener, eds., *Cinephilia: Movies, Love and Memory*, (Amsterdam: Amsterdam University Press, 2005): 32.

darkness, heightening the feeling of being suspended in a virtual dimension without physical limits.

In the cinema and at home, dimming the lights and turning up the volume amplifies the degree to which we forget about our own body so as to engage in watching and listening to a movie, sometimes even touching or tasting through the synesthetic or haptic powers of certain images.¹⁵ Accordingly, in classic narrative cinema's subjective point of view, a character's body partly or wholly disappears from the frame. Such strategies allow us, as the spectator, not only to half-dream our way through a film, but also to engage with the expression of altered states of consciousness where images and sounds are supposedly the product of mental processes. Paradoxically, both of these experiences can involve audiovisual representations of extreme physicality (fighting, crying, flying...). Whether awake or dreaming,¹⁶ characters in films move, fall or take off in the air, as we ourselves sometimes do in our sleep. In all such cases, however, it is the incapacity to act on the film's progression that grants the experience its oneiric quality: as the dreamer with dreams, the film spectator does not control the flow of images: once triggered, they cannot be easily altered or fully erased at will.¹⁷ Nor can we always choose to retain a memory, or the trace of a dream,

15 L.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). M. Beugnet, *Cinema and Sensation* (Edinburgh: Edinburgh University Press, 2007).

16 Whereas a dream or a memory is a subjective reality emanating from the psyche, a film is an external product constructed according to a common idiom. In conventional filmmaking, transitions mark out the passage from woken to altered states of consciousness (fades in and out, blurredness, distorted perspectives, spiralling images amongst others). Film dreaming is thus reclaimed and repurposed as the representation of dreaming in film.

17 See T. Kuntzel, "Le defilement", *La revue d'esthétique* (1972), reprinted in D. Noguez, ed., *Cinéma: théorie, lectures* (Paris, Klincksieck, 1978): 97-110. R. Bellour, *L'entre-images: photo, cinéma, vidéo* (Paris: La Différence, 2002): 86. M. Beugnet, *Le Cinéma et ses doubles* (Bordeaux: Bord de l'eau, 2021): 5-6.

any more that we can keep a precise recollection of all the images of a film whose course we can hardly change.¹⁸

As with films previously, claims are being made today about the capacity of immersive environments, including virtual reality, to offer viewers or experiencers effective simulations of altered states of consciousness.¹⁹ In what follows, we look anew at the enduring question of time-based mechanical (lens based and digital) media's ability not merely to take us outside of or besides ourselves, but also to generate an imaginary realm of their own. In doing so we consider the issue of aesthetics alongside the conditions of spectatorship and reception. In some ways, as we will see, the new technologies of audio-vision appear less apt than conventional cinema to induce us to "cross the bridge" and venture into the land of phantoms. In others, they emerge as privileged entries into dream-like worlds of our contemporary, technologized era. What interests us most is not the lure of the "myth of total immersion" or the pursuit of the perfect conflation of perception and representation that would entail the erasure of the frontier between reality and fantasy.²⁰ Rather, we concentrate on the way cinematic virtual reality (including built immersive environments and head-mounted displays) creates the illusion of presence while exploiting digital imaging to emulate

18 Remote control usage destroys the experience of time as co-presence, or of time slipping away (also an essential dimension of memories and dreams). Accordingly, Laura Mulvey associates the remote control with the emergence of a possessive spectator in *Death 24x a Second: Stillness and the Moving Image* (London: Reaktion Books, 2006).

19 From David Cronenberg's *Videodrome* (1983) to Kathryn Bigelow's *Strange Days* (1995) and Steven Spielberg's *Ready Player One* (2018) amongst others, the association of immersive technology and altered states of consciousness is a favoured topic in mainstream cinema. For a VR example see *Dream* (2016) by Philippe Lambert, which is built on a custom audio-visual synthesizer coded by Édouard Lanctôt-Benoit. <https://www.nfb.ca/interactive/dream/>.

20 See M. Beugnet, L. Hibberd, "Absorbed in experience: new perspectives on immersive media", *Screen* 61, no. 4 (2020).

the dreamlike state of cinematic reception and conjure up a specific, distinctive kind of imagining.²¹

In the cinema, the obscurity afforded by the auditorium creates the condition for a unique experience: that of a shared space where a collective dreamlike or light hypnotic state prevails. Contrastingly, when viewing a work in a head-mounted display, there is no “joint watching”. The solitude is inescapable, only faintly or temporarily relieved in encounters with others, as characters or actors in the shape of avatars. Darkness creates a connection nonetheless, an evocation of an infinite space that, ultimately, we all have in common. Hence, in spite of differences in viewing conditions, we find that between the medium of 2D film and that of cinematic virtual reality, darkness combined with the visual replication of motion proves to be a potent harbinger of the dreamlike. It unsettles our grounded-ness in place and demands that we forge new connections with images, and with the world, ourselves and others. We further suggest that across VR and film, darkness inaugurates a shift from the collective experience of subjective states toward the individual experience of an unconscious shaped by the shared knowledge of our finitude. Though we are told we live in the age of the Anthropocene, we have an acute sense of the relativity of our existence, of being caught in perpetual movement, connected yet unanchored. Like the dot-size character who faces the starry vastness of the universe at the end of *The Incredible Shrinking Man* (Jack Arnold, 1957), the viewer who slides into the seemingly limitless night of contemporary films and immersive environments may experience a dreamlike state of radical groundlessness – a contemporary sense of solitary, yet shared, unmooring.

21 Virtual reality is assumed to be closely entwined with interactive gaming and simulated training. This article however focuses on the transmedial practices of narrative and immersion – across film, video art, and immersive installation art – where the spectator rarely drives the story or provokes events.

In “Of other spaces”, Michel Foucault notes how, from Galileo onwards, things could now only exist in their relative placement and movement:

a thing’s place was no longer anything but a point in its movement, just as the stability of a thing was only its movement indefinitely slowed down. In other words, starting with Galileo in the 17th century, extension was substituted for localization.²²

The site of an object, from then on came to be defined as “relations of proximity between points or elements”, like “the dots in a constellation”.²³ Foucault builds on the pre-modern analogy between body and universe, arguing that traditionally, space had been constructed as “a space of radiation. Man is surrounded by it on every side; but, inversely, he transmits these resemblances back into the world from which he receives them”.²⁴ In other words, the body is conceived as the medium through which the world is organized as it is perceived. Perspectival art, with its stable construction of space and anchoring of the gaze to a specific position in space, emphasizes such a sense of place-ness and orientation. Though conventional filmmaking adopted the continuity system in an effort to emulate this centralized condition, its mobile gaze and time-based structure always threatened to reveal the fragility of the model.²⁵

Alternative uses of cinematography thus sought to explore the relativity of movement and place, showing the anthropomorphic gaze, with its safely located source, to be an artifice. This approach was not exclusive to experimental cinema: in science fiction and documentary film

22 M. Foucault, “Of other spaces: utopias and heterotopias”, trans. J. Miskowiec, *Diacritics* 6, no.1 (1986): 22.

23 Ibid.: 23.

24 M. Foucault, *The Order of Things* (London: Random House, 1970): 23.

25 J. Berger, *Ways of Seeing* (London: Penguin Books, 1972): 18.

reconstitutions of outer space in particular have made us familiar with “impossible” viewpoints, where a virtual camera circles around planets and floats through constellations.²⁶ Here again, darkness, like the sidereal night, is key – sucking the spectators into its awesome solitude even as they sit in a crowd.

As we will see, immersive technologies have in turn proven to be remarkably able to produce a radical sense of dis-anchoring. A 360-degree omnidirectional scape that moves independently from the viewer’s own movement implies a constant and uncontrollable fluctuation of one’s place within the image. With the dissolution of a stable single-point perspective the body of the observer ceases to be the sole reference and singular source of the gaze as an ordering principle of visible space. The most potent aspect however of these novel immersive environments is the means to enter into the boundlessness of 3D constructed worlds, endless spaces that find in darkness their most compelling expression. In the fathomless blackness of virtual spaces, furthermore, the solidity of represented things is prone to slip away. The liminal threshold of immersive worlds is arguably always teetering on the brink of dreams – an aspect that the fanfare of virtual reality and the clumsiness of head-mounted displays paradoxically diminishes. Even in 2D iterations construed from 3D renderings however, as is the case in the floating world of *Thing*, such an evocation of the universe offers itself as powerfully oneiric experience.

Sidereal night: Anouk De Clercq’s *Thing*

The first minute of Anouk De Clercq’s film *Thing*²⁷ is entirely black. The sound track is also initially

²⁶ Famously in the “Blue Danube” sequence of Stanley Kubrick’s *2001: A Space Odyssey* (1968).
²⁷ Video, b/w, 16:9, stereo, BE/IT/FR, 2013, 18’.

completely silent, though after a few seconds the faint noise of a light wind or breathing is heard, followed by a voice. The sound of the voice is slightly echoey, as if heard in a large, empty space. Then a crashing noise, followed by the appearance of thin, veil-like formations white dots that move into view from the right of the frame. But whose view? For the voice remains disembodied throughout, and its musings do not refer to the images with any specificity. Nor can we safely establish its location, as its stereophonic transcription varies in spatial orientation, switching from our right to our left ear. Equally impossible to determine is the origin of the movement that alters what we are given to see. Suggested by the changing size of the shapes and their moving in and out of frame, such spatial proximity or distance could equally mirror the trajectory of an invisible observer floating in the dark space, or that of the cloud formations themselves as they enter the former's field of vision. Occasionally, a fade or a cut to black or a glitch-like effect (with a crackling sound emitted as all vanishes) plunges the screen back into utter darkness.²⁸

Thing appears to be a journey through a virtual world, born out of the imagination of a fictional dreamer – given the nature of the images and the model-like apparitions of cities and buildings this dreamer could be the engineer of this world. De Clercq describes *Thing* as a journey through an architect's "virtual memory", "a boundless, imaginary space" where fictional buildings and urban patterns emerge and disperse in the darkness, a series of ephemeral nebulas that manifest as a kind of "paradoxical materiality" precisely because they are "virtual".²⁹ The film was made using LiDAR imaging of urbanscapes (an acronym for Light Detection and Ranging), a remote sensor

28 See R. Misek, "The black screen", in M. Beugnet, A. Cameron, A. Fetveit, eds., *Indefinite Visions: Cinema and the Attractions of Uncertainty* (Edinburgh: Edinburgh University Press, 2017): 38-52.

29 See the video here: <https://portapak.be/works/30/thing>, accessed 18/12/2020.

technology that generates accurate 3D information about the shape of very large surfaces and their characteristics using pulsed laser emissions to measure ranges between the sensor and the surface. Developed for architectural, archaeological and engineering surveys, such visualizations provide a way of seeing spatial information, which is augmented when viewed in a 3D stereoscopic environment. Yet another digital program subsequently renders the LiDAR data as “point clouds”, the dots of light we see in *Thing*. Most of the shapes and forms conjured up in *Thing* are made of these unstable, constantly reshaping clouds of dots.

Although the initial light point formations resemble natural phenomena – cirrostratus, cirrocumulus or constellations – they later produce artificial patterns. An elongated, geometrical form floats in the dark like a spaceship, and the monumental entrance to a city materializes and dissolves. We then travel through the diaphanous outlines of a district with a mesh of buildings with terraces and hanging gardens. The cross-cutting of a workshop appears and slowly glides in and out of view, its furnishings (stairs, hanging lamps, an easel, the semi-circular shape of what looks like part of a bull’s eye window) sketched in brilliant white against the surrounding night.

Some of the point cloud renditions are reminiscent of white charcoal drawings on black paper, while the buildings and the room resemble X-rays: ghostly, silvery shapes in a process of disintegration. While X-rays and 3D scanners are already used to document vestiges, as well as to augment the existing data of artefacts and archaeological sites, film also holds a specific connection to ruins. Of the attraction exercised by ruins on the cinema, André Habib notes how they offer themselves as the poignant manifestation of the transience of all things human, including that of our own existence. The inexorability of the flow

of 24 images or frames per second – of the ephemerality of its linear course from beginning to end that may be repeated or looped but not halted – explains the “melancholy, quasi-ontological” relation that connects the medium to the temporality and spatiality of ruins.³⁰ Drawing on techniques and visualizations that fuse the astrological and the architectural, De Clercq collapses human time and space (its material, located traces, its memories and dreams) in the infinity of the sidereal night.

To craft its boundless post-Galilean dream of space as a universe where the individual body and the individual consciousness are free floating or diffuse, *Thing* uses the tools of 20th and 21st century imaging. This drawing together of film, architecture, and infinite space gives De Clercq’s film an affinity with so-called immersive environments: a 2D film with a 3D sensibility, best seen in the obscurity of a cinema, it makes full use of the darkened film-theatre as its immediate, continuous extension.

“Dark, weird and shadowy”: Laurie Anderson and Hsin-Chien Huang’s *La camera insabbiata/Chalkroom*

Experimental multimedia artist Laurie Anderson has produced a series of virtual reality works that elucidate some of the aesthetic traits of De Clercq’s *Thing* in a fully 3D format, also harnessing some of VR’s aptitude to create dreamlike and out-of-body experiences. Created in collaboration with media artist Hsin-Chien Huang in 2017, *Chalkroom* is an installation and an interactive VR experience, permanently installed at the MoCA in Massachusetts, USA.³¹

Seated viewers don a head-mounted display and take up two handheld controllers to enter into the VR

30 A. Habib, *L’attrait de la ruine* (Crisnée: Yellow Now, 2011): 9.

31 Virtual reality 360 degree3D interactive video and installation, EN, 2017.

experience. In the first scene, a lone architectural structure sits on top of a mountain. Unlike the architecture in *Thing*, the building appears to be concrete. You are coaxed to fly over and enter it, navigating a series of narrow corridors toward a small portal at the end. The controller, which also acts as a torch, is the only source of light. The virtual walls are covered in chalk writing, like their physical counterpart outside the head-mounted display. Here, however, the torchlight illuminates a small orb, making the text all the more elusive – a curious and perverse effect given that the artists have designated us as “readers” instead of viewers. Words disintegrate into phenomes, and break apart again into letters, like swarms of flies. Yet, Laurie Anderson’s velvet intonations flow over this eerie place, making it homely.

Claustrophobic passages open out into an infinite black space that contains a constellation of text. You’re free to fly around and explore the space, hidden stories narrated by Anderson, which emerge as you approach certain zones. Objects, such as an illuminated, leafy tree, dissolve on closer inspection, and you see this too is made up of letters, as Anderson whispers to us: “You realise that things are made of words”. In interview, she explains being initially unsure about VR because it was too game-like, but that if she could make something “very homemade, dark, weird and shadowy, a different kind of space, a different kind of mental space” then she would be interested.³² Her aim, she adds, was to create an experience where you could fly “like in your dreams”.

On the face of it, since immersive environments such as 3D films in 360 degree cinema projection and virtual reality experiences on head-mounted display, or HMD,³³

32 “Laurie Anderson interview: A virtual reality of stories”, 2017, Louisiana Channel. Accessed 20/12/2020: <https://www.youtube.com/watch?v=zHT016FbR30>.

33 It is important not to confuse VR with the HMD. In simplest terms, Virtual Reality is defined as being the coherence of technical means that enable a person to interact in real time with a virtual world.

effectively “environmentalize”³⁴ the image, one could expect the “womb” effect to be perfected and even emulated, as with Anderson’s installation. However, in contrast with conventional spectatorship, absorbed viewing is undermined by the degree of physical activity involved in the experience.³⁵

In addition to the heaviness and discomfort of the hardware – the headset and headphones – and the optical strain of stereoscopic vision, the attention and effort involved in interacting with the virtual environment paradoxically induce a sense of heightened physical awareness. Rather than projecting itself, the sentient subject engages with the task of controlling the effects of its own motricity in the here and now: a “presenting”, rather than an absenting of the body. These effects might be the result of VR’s relative novelty. Nonetheless, it seems that in the narrative context of cinematic VR – beyond gaming and therapeutic applications – interaction and causative acts tend to undermine immersion, contradicting widespread theories of “presence” in VR.³⁶ After all, it can be very unnerving to feel your body split in two: an HMD effectively separates our head from the rest of our body. Not only can we not see our (real) selves but unless we are offered some form of avatar we also lack a visible body in the virtual world. Once we get used to this literal mode of “absenting” however, new forms of *ecstasis* become possible. As we become familiar with the process of virtual seeing, touching and moving, our experiencer or avatar body may recede into the background of our awareness, just like our lived body

34 A. Pinotti, “Environmentalising the image. Towards an-iconology”, in dossier M. Beugnet, L. Hibberd, eds., “Absorbed in experience: new perspectives on immersive media”, *Screen* 61, no. 4 (2020): 594-603.

35 Interestingly, in *Sunrise* the virtual screen vanishes when the woman starts dancing.

36 See C. Heeter, “Being there: the subjective experience of presence”, *Presence: Teleoperators and Virtual Environments* 1, no. 2 (1992): 262-271.

does in a reverie, leaving us to be “ecstatically caught-up in the virtual world”.³⁷

Distinct from many other VR interactive experiences, *Chalkroom*’s freedom to roam inhabits this liminal zone for two reasons: one, choices don’t lead to deterministic or sequential narratives, and thus, similar to a dream or hallucination, we feel that we are driven by compulsions and desires. Two, and even more compelling, is the sense that you cannot put your feet on the ground, that you are floating free. Anderson describes this in terms of disembodiment, stating that “losing your body” is one of her chief interests in producing these works.³⁸

The inherent disembodiment felt when navigating a 3D world in VR immersion is all the more estranging when it is set in the dark. The chiaroscuro effect is theatrical and exaggerates the sense of volume and depth as in a Baroque painting. And lower levels of light are also less visually straining in VR. In *Chalkroom* the upshot of floating through the dark signals our descent into the night; a diurnal cycle that we are bound to as circadian creatures. Anderson aptly remarks: “What are nights for? To fall through time into another world”; a world where, as Huang points out, “the words become a nebula” – chalk dust, atomised, diffuse matter disintegrating upon touch, evading our grasp.

While not all HMD-supported VR relies on interactive interfaces, wearing a head-mounted display cuts us off from the surrounding reality more effectively than the dimness of our living room, or the darkness of the cinema auditorium (where exit signs, are by necessity always visible).³⁹ Distinct from watching the audience at a film screening, to observe someone wearing an HMD feels

37 A. Leder, *The Absent Body* (Chicago: Chicago University Press, 1990): 22.

38 “Laurie Anderson Interview: A Virtual Reality of Stories”. In performance studies, such a transit state is called “liminoid performance”. See Alexandra G. Murphy, “Organizational politics of place and space: the perpetual liminoid performance of commercial flight”, *Text and Performance Quarterly* 22, no. 4 (2002): 297-316.

39 A. Pinotti, “Environmentalising the image. Towards an-iconology”.

a bit like trespassing. As when we look at someone who is sleeping, the experiencer is not aware of our gaze. At the same time, we have no access to what they are seeing. The duality of mind and eye as well as inner and outer worlds is a consistent theme in narrative VR experiences, one that is explicitly realised in works that manifest otherwise invisible or intangible traces, senses or information – or as in *Notes on Blindness* a lack of access thereof.

Notes on Blindness: Into Darkness.

The virtual reality film, *Notes on Blindness: Into Darkness*⁴⁰ was created as a counterpart to the feature documentary *Notes on Blindness* produced by Peter Middleton and James Spinney in 2016. Both works arise from the first-person audio narration of John Hull, who describes in visceral and philosophical terms the process of losing his sight.⁴¹ Mired in darkness, as its title indicates, the VR version of the feature film has a wraith-like quality; of thin veils of light suspended in twilight. Its narrative is structured around six parts, each one being a memory, a moment, and a specific location recorded on John Hull's tapes; each scene requiring a different level and form of interaction from the viewer in order to follow or progress through the narrative. Sound is central to the work, augmented through binaural audio (that spatializes sound as if it were bouncing around your ears), while the 3D rendering of objects and moving figures create a highly immersive experience. Similar to *Thing*, its most evocative aspect is the use of point

40 With narrator John Hull. Interactive virtual reality, 360-degree 3D video, colour, EN/FR, 7', 2016.

41 Based on John Hull's memoir, *On Sight and Insight: A Journey Into the World of Blindness* (Oxford: Oneworld, 1997).

cloud to suspend firefly-like dots in a seemingly infinite deep indigo.⁴²

The first two scenes in *Notes on Blindness* establish the parameters for acoustic seeing: in the obscure world evoked by John Hull we must learn anew how to look with our ears. Light signals how sound might feel and alerts us to the acoustic realm in three dimensions. It is, however, in the second and third scenes that we are subjected to something closer to liminal performance. As Hull begins to realise that he can no longer remember what things or loved ones look like, he descends into despair. His fear of being trapped alone in darkness culminates in a scene out in the snow, where he panics because he loses all sense of place. At the end of the narration however, the VR interaction invites us to dissolve his footprints in the snow by training our attention, with our head position tracked by the HMD, on their impression in the darkness. When the first set of footprints vanish another pair appear, leading us in Hull's steps back to the safety of home.

In the episode that features rain, Hull's house is an almost silent place except for his gentle voice and the reverberation of raindrops falling on ordinary objects in the room. We are again invited to interact with our gaze, this time to give shape to otherwise hidden forms that the rain defines acoustically: pots, pans, glasses, dishes. This is a pivotal moment in Hull's own life and the VR film; we too understand what it is to create the virtual shape of things by listening to them. There is also a specific, oneiric quality to the space that the VR work creates whereby Hull's experience becomes a shared one, rather than a voyeuristic observation of someone losing their sight.⁴³ Everything we hear is echoed in its visual equivalent; renderings that

42 Point cloud started to appear in cinematic VR works at this time. See, for instance, "Coexistence" 2016, at the Venice Architecture Biennale: <https://vimeo.com/183596023>

43 For ethical issues related to the work, see D. Leblond, "Landscape Shaped by Blindness. Touching the Rock (1990) and Notes on Blindness (2016): Towards an ec(h)ology of vision", *Études britanniques contemporaines* no. 55 (2018).

appear as point clouds: luminescent, 3D shapes of objects and moving bodies that create elusive, lace-like silhouettes in the darkened space. In the process of becoming fully recognizable, and as they unravel and disperse into thinning clouds of bright specks, these forms resemble constellations. Hence, in *Notes on Blindness*, as in *Thing* and *Chalkroom*, the darkness acts as a connecting material: boundless, it enfolds all of us (seeing and non-seeing individuals) in a cosmic infinity that is simultaneously intimate and terrifying.

“Cold space, a dark place”: *Parragirls Past, Present: unlocking memories of institutional “care”*

The immersive VR film *Parragirls Past, Present*⁴⁴ is set in the grounds and buildings of Parramatta Girls Home – a punitive welfare institution for teenage girls situated in Western Sydney, Australia, closed in 1974 and abandoned since the late 1990s. Its creation pivots on the memories of five former occupants, among the hundreds who have returned after many decades to confront this terrible place. As a labour of remembrance mired in trauma, the project required more than a year of collaboration with the aim of finding a form of testimony that might convey the survivors’ experiences to a wider public. In Parramatta Girls Home, children were not only deprived of freedom, but also cruelly disciplined and abused. Later, both Australian government inquiries and media reporting sensationalized and underscored their stigma and victimhood. The last thing Parragirls could abide was to provide viewers with prurient pleasures. Hence, a number of counter-visual strategies were developed, ruling out interactivity as a means

44 360-degree 3D stereoscopic video, ambisonic spatial sound, EN, 2017, 23’.

for viewers to progress through the virtual environment and its narratives.

As with *Thing*, *Chalkroom* and *Notes on Blindness*, the point cloud photographic technique, materializing against the surrounding darkness, proved key. Among the varied ways that images can be “environmentalized” in 3D and 360 degrees, point cloud is distinct: it bears little resemblance to the synthetic imagery of game and CGI animation. Cartographic in origin, point cloud provides a means to project these as experienceable architectures – places we can fly through, as if in space. In addition to the sense of irrepressible movement, of being sucked into the institution’s spatio-temporal vortex, it is the transformation of photographs into points of light and colour that float in an abysmal 3D world that gives *Parragirls Past, Present* its wraithlike and enigmatic atmosphere.

Accompanying the journey is the sound of the Parragirls’ voices, captured in ambisonic recordings. Woven together, they offer a deeply personal yet collective account of their experience as inmates. There is one location in particular in the Girls Home that former occupants find difficult to revisit: a basement solitary confinement cell, colloquially known as the dungeon. In the film, Gypsie Hayes describes it thus:

the only way you can survive in there is to curl up and go to sleep. That’s all you could do to survive that. It was nothingness. It was just a cold space, a dark place.

In contrast to the exterior point cloud scenes, the cell is represented as a stereoscopic spherical panorama in 360 degrees. Moving between the differently rendered and spatially located spaces, presented yet another dilemma however, which was resolved using the point cloud aesthetic as a form of transition in conjunction with moving

tracking shots, to dissolve the image across one space or dimension into another.

The most unusual impact of combining point cloud with mobile tracking shots in the 3D world of *Parragirls Past, Present* is the feeling of being pulled through the experience, almost against our will. The data points seem to transcend and even pierce our body, so that we become part of the ghost-like substance of the Girls Home. Distinct from its head-mounted display viewing, in the 3D 360-degree film screenings of *Parragirls Past, Present* at UNSW EPICentre. Standing alongside 10 to 15 spectators wearing 3D glasses, you can see the points appear to emerge in 3D from the circular screen and pass through the bodies of the viewers beside you. The imagery may appear spectral as it floats through space, but so are the audience, whose bodies are traversed as if they had no consistency or solidity.

Crucially, in conjunction with the nightmarish, endless darkness and the omnidirectional eye, point cloud effectively disassembles the centralized gaze of VR's typically first-person perspective: enfolded in swarms of floating pixels, we start to feel what it must have been like to be under constant disciplinary surveillance – to be watched at all times by invisible omniscient eyes.

In the concluding shot, however, we fly out backwards, as if pulled up and out into the sky, discovering the vast emptiness that extends beyond the perimeter of the institution. On the one hand, what we are literally seeing are the limits of the photogrammetric images that could be recorded – black holes in both data and historical memory. On the other hand, as the sound of the multiple voices vanishes, we grasp a sense of the collective unconscious that Parragirls still share with the other former occupants of the Home: the internalisation of a state of incarceration, being severed from the rest of the world, unable to imagine what lays beyond the space of incarceration other than a void.

Conclusion

In moving image media, as in real life, darkness has always been a privileged channel towards alternate states of self or alterity. Black spaces encourage us to relinquish control of sensing bodies, simultaneously fostering a sense of placelessness: in the dark, we lose our sense of orientation and lack the necessary landmarks to evaluate distance and depth, and order the space according to the familiar rules of perspective and proprioception. In immersive environments, the feeling of being unmoored is heightened by the “environmentalizing” of the space: night enfolds us on all sides. Within this dis-anchored realm, the voices that appear to address us but remain devoid of a visible source seem to take possession of us, strengthening the sense of losing one’s grip. But darkness is not the only precondition to our slipping into an altered state of consciousness. The experience of the scene unfolding independently from our will is equally important, which also occurs when watching 2D films. While spectators can look around in every direction in both the HMD and in a 360-degree 3D cinema, if you cannot control your propulsion through a space or scene then the film acts on you.

Only at this price – in accepting that I cannot change the “order” of the images and sounds – can a form of “dreamwork” take place.⁴⁵ In the works described here, the unravelling of the images is inseparable from the relentless, gliding movement that sucks us in, and, in the case of 360 degree 3D films, passes “through” us: to turn our head and look back is to experience the sense of memory disintegrating, and history as ruins, that Walter Benjamin so vividly

45 As Thierry Kuntzel points out, such is the specificity of time-based media and its special link to the dream-like and to the unconscious: “the film and the story unravel outside of me, I cannot possibly intervene”. T. Kuntzel, “Le travail du film”, *Communications*, no. 19 (1972): 27.

evoked with the allegory of the angel of history.⁴⁶ Lighting up in darkness, point clouds appear like the ultimate expression of transience. Though they are a mere effect of a particular imaging technology, they often look like constellations, or like particles that float in space, such as dust, petals or snowflakes; points that redefine deep space as a conduit to the dreamlike. A figuration of matter propagating, taking form and then dissolving, point clouds perfectly capture the melancholy awareness of the impermanence of the material world, and the all-too human, shared sense of finitude, loss, and awe experienced in reminiscing and day-dreaming.

46 W. Benjamin, "Theses on the philosophy of history", trans. H. Zohn, in H. Arendt, ed., *Illuminations* (New York: Schocken Books, 1969): 249.

The hallucinatory aspect of virtual reality and the Image as a *Bilderschrift*¹



by Pietro Montani

Abstract

This article discusses the following points:

- The analogies which can be identified between Virtual Reality (VR) and the hallucinatory aspects of dream activity make sense within a network of relations characterised by certain important cognitive performances (in particular inferential performances) which can be attributed to the work of the imagination;
- To assure the plasticity of these performances, the imagination seems to have to distance itself somewhat from linguistic thought and in dreams this is achieved regressively via the hallucinatory state. Various authoritative neuroscientific approaches to dreams significantly substantiate this theory.
- At the time when its correlation with linguistic thought is deactivated, the imagination does not, however, surrender itself to the hallucinatory event but elaborates it with recourse to practices similar to those of syncretic writing – a *Bilderschrift* or “pictographic script” as defined by Freud;
- It is significant that very early cinema also addressed the quasi-hallucinatory aspects of films, practising an “intermedial” *Bilderschrift*, i.e. a treatment of the images that is attentive to the comparison and integration of the different levels of expression which work together in the composition of a film;
- Digital images seem to revive this production model in several ways and I will offer two examples highlighting their affinity with syncretic and intermedial writing.

[Virtual Reality](#)

[Imagination](#)

[Hallucination](#)

[Dream](#)

[Regression](#)

[Intermediality](#)

To quote this essay: P. Montani, “The hallucinatory aspect of virtual reality and the image as a *Bilderschrift*”, *AN-ICON. Studies in Environmental Images*, no. 1 (2022): 153-171

Virtual reality, hallucination and the dream-imagination

The hallucinatory aspect of VR is obvious to those who have experienced or wish to study it. However, not everyone hallucinates and so the hallucinatory nature of dreams offers the most immediate and comprehensible parallel – an experience we undergo during sleep with a frequency and regularity familiar to all.²

VR and dreams cannot be treated as entirely identical phenomena, indeed there are many and significant differences as we shall see shortly. However we can immediately highlight at least two essential parallels. The first is the compelling illusion of reality that differentiates hallucinatory dreams and VR images from other types of internal and external images processed by the imagination. This leads to the second parallel, regarding the unalterable nature of what is perceived. Apart from some exceptional cases (e.g. “lucid dreaming”), we cannot intervene in dream images, the realism of which is experienced as both convincingly plausible and undeniably objective. The same applies to the fundamentally hallucinatory nature of VR images (although there are clearly many potential exceptions, to which I shall return in the final section). I would happily add a further property in the presence of sufficient evidence and that is how easily we forget dreams, which corresponds – although this is a totally subjective observation – to the ease with which we discard large portions of our VR experiences.

I must stress that the two aforementioned properties are linked to the particular realism of dream and VR

1 This article refers to the European research project “The Future of Humanity: New Scenarios of Imagination” (Vilnius University). This research is funded by the European Social Fund (project no. 09.3.3-LMTK-712-01-0078).

2 The analogy between VR and dreaming has already been explored. See for example R. Diodato, *Estetica del virtuale* (Milan: Bruno Mondadori, 2005), which, however, chooses a different approach from the one I will propose here.

images. So, although the latter come in several interactive forms (e.g. immersive installations) that can alter the perceived environment, this does not impact on the fundamentally hallucinatory state of the images delivered. On the contrary, the degree of interactivity in dreams is limited to the activation of cognitive processes internal to the dream event such as the linguistic formulation of judgements and inferences, and an evaluation of the emotions experienced. But here, too, these processes are dependent on the objectivity of the images experienced. I shall provide a personal example: the night before starting this article I dreamt that I encountered a stranger in the street and sensed with great pity and concern that he clearly felt ashamed, although there was no indication as to why. Without entering into more detailed analysis, what I have described was clearly a hallucinatory event accompanied by a congruent judgement explicitly formulated in the dreamer's inner discourse, and which included the word "ashamed". But it was not a "lucid dream". A Freudian analyst would say that the dream was mine so the pity and concern were directed at a part of me. This may be so, but this split within the dreamer reinforces rather than diminishes the objectivity of the sentiment I felt and the congruence of the judgement I associated with it (i.e. that the human condition is truly compassionate – and mysterious – if someone can show shame for no apparent reason). Ultimately, it is the radically immersive state of the two traits shared by VR and dreams that should be underscored:³ we become *caught up in a*

3 For a helpful classification of all the VR forms see V. Catricalà, R. Eugeni, "Technologically modified self-centred worlds. Modes of presence as effects of sense in virtual, augmented, mixed and extended reality", in F. Biggio, V. dos Santos, G. Tyerry Giuliana, eds., *Meaning-Making in Extended Reality* (Rome: Aracne, 2020): 63-90. According to the accurate schema divided into four categories discussed in the article, the type on which these considerations focus occupies the second level of the third type ("Advanced cinematic VR"). However, the authors describe "radical immersive media" as a broad category of devices (which can be further divided into two subgroups) designed to interact in different ways with the real world. For reasons that will become clear later, I shall limit my considerations to a very general analogy between VR and dreams.

simulated environment featuring images that coercively force their presence on us.

And now for the equally significant differences. What I have described – and why I was able to describe it – was clearly a dream occurring in a REM sleep phase. It was one of those dreams availing of closer integration with Freud’s “secondary process” and the ones we remember (or reorganise) with greater satisfaction. The neurophysiological processes at work in all sleep phases are fairly well known today, although the scientific community has reached no full agreement on the functional meaning to attribute to the incoherence and transience of their dream products. We do not know exactly what purpose is served by the low structural level of dreams but there appears to be good support for the theory – adopted here – according to which their principal function is to increase the “fitness” of some processes of the imagination conducted in a wakeful state (particularly inferential ones) by reducing their redundancy and complexity in several ways.⁴

What does this strange neural work look like? Some have likened it to the wandering undertaken by our vigilant imagination⁵. Dreams (REM and NREM) also seemingly implement a momentary state of generally indeterminate, organised and specialised cognitive function (e.g. intentionality and attention) to maintain the brain-mind for periods of varying length in the purely virtual phase effectively described as the “default mode network”. This is a typically “experimental” phase as both the dream and the wandering explore numerous potential configurations of

4 Here and elsewhere I refer in particular to an important essay by J.A. Hobson *et al.*, “Virtual reality and consciousness inference in dreaming”, *Frontiers in Psychology* 5, no. 1133 (2014) <https://doi.org/10.3389/fpsyg.2014.01133>. Hobson is an undisputed authority on dream studies and shares the theory (see in particular the works by G. Tononi) that dreams optimise some wakeful cognitive processes by alleviating and “pruning” the synapses in excess.

5 See M. Corballis, *The Wandering Mind: What the Brain Does When You’re Not Looking* (Auckland: Auckland University Press, 2014). Corballis is a psychologist who mainly studies language but his book is up-to-date on the most accredited developments of the neurosciences regarding the dream phenomenon.

well-defined or simply hypothetical situations and problems, often varied or even disparate. In this sense, the “default mode network” active in dreams in the hallucinatory form familiar to us prompts the entire neuronal apparatus to enter into free flow with no fixed objectives, allowing the “innate generator of virtual reality” in our brains to behave as a “free-running inference machine”.⁶ This machine – and we shall return to this – benefits from a “synaptic regression”⁷, a temporary reinstatement of extremely primitive neural circuits not used in the wakeful state.

In other words, our brain seemingly needs to suspend dealings with the real world (and its complexity) at regular intervals and start dialoguing with itself, generating simplified and incoherent simulacra of a world so as to optimise, on reawakening, the performances that will enable it to cope *once again* with the complex (and harsh) reality. The autopoietic and virtualising nature of this work⁸ offers a simple explanation for the fact that the foetus falls into full REM sleep in the thirtieth week of life.⁹ This is pure cognitive and proprioceptive training in VR as, at that stage, its only experience of the world is intrauterine. Hobson, Hong and Friston astutely likened this surprising evolutionary phase to an insurgence and initial coordination of the a

6 J.A. Hobson *et al.*, “Virtual reality and consciousness inference in dreaming”: 22. As better clarified below, I shall here intend the concept or “regression” also in the specifically Freudian sense.

7 *Ibid.*: 15.

8 I discuss this point in P. Montani, *Tre forme di creatività. Tecnica, arte, politica* (Napoli: Cronopio, 2017).

9 See J.A. Hobson, “REM sleep and dreaming: towards a theory of protoconsciousness”, *Nature Review Neurosciences* 10 (2020): 803-813 10.1038/nrn2716.

priori (intuitive and intellectual) forms discussed by Kant¹⁰ (to whom we shall return).

What temporary conclusions can we draw from the parallel between the dream hallucination and VR? A crucial point regarding both the analogies and the differences seems to require critical attention. The neurophysiological study of dreams shows that a *significant relationship* can form between the sometimes hallucinatory and incoherent nature of images and the *emergence* of our cognitive strategies in the broad sense (e.g. the inferential activity attributable to the imagination).¹¹ The emphasis should fall on both requisites – the incoherence and the hallucinatory nature – although, for obvious reasons, VR seems keen to focus primarily on the latter. To address this problem properly, we should refer to Freud’s great work on the mental significance of dreams¹², starting from a fairly solid point of contact between the neurophysiological model with which he worked and the very different ones we work with today. This point of contact consists in the specific importance of *regression* in hallucinatory and incoherent processes managed by the dream-imagination.

Regression and “Bilderschrift” in dreams

When referring to Freud I shall totally disregard the aspect dearest to his heart, that dreams are *interpretable* and that this very interpretability defines their

10 J.A. Hobson *et al.*, “Virtual reality and consciousness inference in dreaming”: 19. I. Kant, *Critique of Pure Reason* (1787), trans. P. Guyer, A. Wood (Cambridge: Cambridge University Press, 1998). In a very important book, *Before Tomorrow. Epigenesis and Rationality* (Polity Press: Cambridge, 2016), Catherine Malabou argued in favor of an “epigenetic” interpretation of the development of Kantian a priori forms. I have developed a similar approach to Kant’s critical philosophy in P. Montani, “Imagination and its technological destiny”, *Open Philosophy* 3 (2020): 187-201.

11 The “judgement” I formulated during the described dream is typically inferential in form. For the Kant of the third *Critique*, it is the *Urteilkraft*, i.e. the “power of judgement”, that is essentially inferential and abductive in nature. See I. Kant, *Critique of the Power of Judgment* (1790), trans. P. Guyer, E. Matthews (Cambridge: Cambridge University Press, 2001).

12 See S. Freud, *The Interpretation of Dreams* (1900), trans. J. Strachey, in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, vols. 4-5, (London: The Hogarth Press and The Institute of Psycho-Analysis, 1955).

immensely important metapsychological condition. Is this approach justifiable? Yes if we refer to the last chapter of *Traumdeutung*, “The psychology of Dream Processes”. A footnote added in 1925 at the end of the previous chapter (VI, “Dream-work”) introduces its objectives significantly, saying that the particular nature of the dream-work should be studied *as such*, over and above the fact that this form of working is used by the unconscious in a hallucinatory and disguised mode to achieve its drives. Freud writes

At bottom dreams are nothing other than *a particular form of thinking*, made possible by the conditions of the state of sleep. *It is the dream-work which creates that form*, and it alone is the essence of dreaming – the explanation of its peculiar nature.¹³

The peculiarities of the dream-work – brilliantly studied by Freud in Chapter VI – are well known: condensation, displacement and considerations of representability. But the common trait is *regression*, intended by the author in a strictly topical sense. Explained as simply as possible (and in non-Freudian language), during dreams our mind-brain reconnects with a very primitive prelinguistic and preconceptual stage of its memory store. Or rather, it is a phase in which a profoundly embodied imagination (think of a baby just a few months old) has also had to perform the work (e.g. inferential) that would subsequently be delegated to linguistic thought.¹⁴

The phenomenon of *regression* does not only belong to dreams, observes Freud, although in dreams it produces a particular “vividness”, a hallucinatory *Belebung*. That this is, in other respects, a somewhat paradoxical process emerges from the fact that “a particular form of

13 Ibid.: 510. My italics.

14 Using the terminology of Deleuze and Guattari, we could say that here the imagination adopts a predominately “striated” manner of proceeding. See G. Deleuze, F. Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (1980), trans. B. Massumi (London: Athlone, 1988).

thinking” is entrusted to the process of regression in which “*the fabric of the dream-thoughts is resolved [aufgelöst: disrupted] into its raw material*”.¹⁵ But, we must add, it is disrupted *as far as is possible* for, although the archaic zone of the memory store in question dates from an evolutionary phase when linguistic thought did not yet exist, the latter will *leave a trace* in the regressive path implemented by the dream state in adulthood.¹⁶ As demonstrated, for example, by perhaps the most surprising requisite of the dream-work: the ability to treat words as if they were objects and play with their signifying matter. Further on, with regard to dream-hallucinations, Freud speaks of a “transvaluation” of thought into images; thought is drawn towards the most archaic memory store, to be seen specifically as a disabling of its logical and linguistic relations in favour of the earliest work of a totally embodied imagination. But these remain transvaluated thoughts and are by no means a reinstatement of a prelinguistic condition. Rather, it is a *new reorganisation of the relationship between image and word*, a radical renegotiation of their “normal” bond (I shall return to this key point later).

This brings fresh relevance to the factor of dream-work that Freud called “regard for representability”

What we have described, in our analysis of dream-work, as ‘regard for representability’ might be brought into connection with the selective attraction exercised by the visually recollected scenes touched upon by the dream-thoughts (...) [So that] dreaming is on the whole an example of regression to the dreamer’s earliest condition, a revival (*ein Wiederbeleben*) of his childhood, of the

15 Ibid.: 545. My italics.

16 This is the theory developed by J. Derrida in *Writing and Difference* (1967), trans. A. Bass (London: Routledge, 2001).

instinctual impulses which dominated it and of the methods of expression which were then available to him.¹⁷

Freud appears to refer to non-elaborated (or semi-elaborated) nuclei linked to powerful emotional investments, such as the “internal objects” Melanie Klein and her followers later discussed when re-elaborating Freudian dream theory in broader and more flexible terms, and today considered widely reliable and compatible with neuroscientific findings.¹⁸ The last lines of the citation (from a 1919 addition) allow us to conclude that the regressive movement Freud attributed to the physiology of dreams can be acquired as *a structural requisite of the dream-imagination* without necessarily attributing it to instinctual motivation. In other words, if dream-work is rooted in the condition of very early infancy – the condition of being “*in-fans*” i.e. not yet capable of speech – this means that the regressive movement of the dream reaches and revives not only the desiring aspects but the concomitant inferential processes too. Thus, these processes *take place in the absence of language* and make predominant use of prelinguistic images and *schema*. We could call it an imagination that “schematises without any concept” as Kant said regarding “reflective judgement”, highlighting its exceptional epistemological significance.¹⁹ This further Kantian indication is by no means casual²⁰ and should be paralleled with the “free-running inference machine” discussed by Hobson, Hong and Friston. Preliminary and free imaginative training is required, hypothetical and exempted from defined

17 Ibid.: 549-550. My italics.

18 This is the theory persuasively argued by M. Mancina, *Il sogno e la sua storia*. (Venice: Marsilio, 2004); and *Sonno & sogno*. (Rome-Bari: Laterza, 2006).

19 See E. Garroni, *Estetica ed epistemologia* (Milan: Unicopli 2003); P. Montani, “The Imagination and Its Technological Destiny”: 3; L. Palmer, “Schematizzare senza concetti e senso comune”, in D. Cecchi, M. Feyles, P. Montani (eds.), *Ambienti mediali* (Milan: Meltemi 2018): 39-56. Significantly, Palmer accompanies his rethinking of the Kantian concept with experimental evidence.

20 See Montani, *Tre forme di creatività*; and “The Imagination and Its Technological Destiny”.

tasks, simplified and experimental, not only (as is obvious) *before* cognition can start to be deployed but also so that it can function *constantly* – e.g. (Tononi’s proposal largely endorsed by Hobson) in terms of synaptic pruning, simplification and resetting of the inferential device.²¹

Before leaving Freud we must adopt another of his valuable indications. Above, I linked dreams to a particular way of reorganising the image-word relationship. I will specify that Freud clearly sees them, ultimately, as a relationship guided by a *principle of reversibility*. Not only are words used as if things, *images also display a key trait of discursive convention*. This trait is also fully comprehensible in intuitive terms: both ontogenetically and phylogenetically, the human imagination must have performed a major work of segmentation, classification and organisation (e.g. inferential) on the experience, valorising a certain *intelligible profile* of the images – precisely that which language will later formalise. Freud calls this property, reactivated by the dream-imagination, a *Bilderschrift*, a picture writing:

The dream-content (...) is expressed as it were in a pictographic script [*Bilderschrift*], the characters of which have to be transposed individually into the language of the dream-thoughts. If we attempted to read these characters according to their pictorial value instead of according to their symbolic relation [*Zeichenbeziehung*], we should clearly be led into error.²²

Freud speaks here from the standpoint of interpretability (not relevant for us) but the observation can of course be generalised. Products of the dream-imagination

21 See G. Tononi, C. Cirelli, *Sleep function and synaptic homeostasis*, *Sleep Medicine Reviews* 10 (2006): 49-62. In this sense and precisely because of its hallucinatory “resuscitation”, the dream-work restores not so much the contents of the oldest inferences but the earliest manner of that performance (i.e. “schematises without any concept”) which conduct precious selective functions for pruning purposes.

22 Ibid.: 296. The translation of *Bilderschrift* as “pictographic script” is highly questionable; and that of *Zeichenbeziehung* as “symbolic relation” is frankly erroneous as the “symbolism” of dreams is not involved here but only the more general sign profile of dream-images.

should above all be observed in terms of their *Zeichen-beziehung*, their singular and archaic relationship with the semiotic order. In other words, despite being hallucinatory, dream-images should *also* be appreciated for their ability to reactivate a condition in which the imagination has *also* processed them as the *signs* of a particular *Bilderschrift*.²³

Our Freudian journey has taken us another major step forward: the *relational* aspect –stressed in the conclusions of the first section – can now avail of a specific and significant reference to a *scriptural element within the work of the imagination*. This element can be *linked* to the radical regressive condition in which the imagination behaves literally as a VR generator. We can now try to better understand how this correlation works.

Bilderschrift in very early cinema and in the digital age: the syncretism and intermediality of images

Interestingly, in its very early days, and roughly when Freud was developing his *Traumdeutung* and subsequent metapsychological additions, the cinema was seen (or conceived) by some film-makers and theoreticians as closely resembling the device of image-word *reversibility* highlighted at the end of the previous section. This means that the birth of the cinema also featured a major focus on the *network of relationships* which the powerful illusion of reality produced by the cinematographic image was clearly keen to unite. In some cases, in particular, that image was seen as a syncretic form of expression: *a space of comparison and integration between different levels of expression*. This section dwells briefly on two significant examples of

²³ On the image-word connection and its meaning for an appropriate understanding of a “history” of the arts, C. Brandi’s observations in *Segno e immagine* (Palermo: Aesthetica, 2002) are valuable, not coincidentally introduced by a discussion on Kant’s schematism,

this understanding of the image – which I call “intermedial”²⁴: a reflection on the cinema of the “Russian Formalists” and Sergei M. Eisenstein’s first cinematographic theory centred on the project of an “intellectual cinema”.²⁵ I shall conclude with some comments on VR installations and their inclusion in the intermedial paradigm of the image.

The Formalists felt strongly that the emergence of the cinema gave their era the privilege of observing a form of art *in its nascent state*. Cinema brought a brand-new addition to the technically reproduced image – the ability to move in time. Boris Eikhenbaum, for instance, argued that with cinema “for the first time in history, an art which was ‘depictive’ by its very nature became capable of evolving in time and proved to be beyond any comparison, classification or analogy”.²⁶ He was struck in particular by the fact that, in cinema, the image medium adopted an original condition because the reception of the film has to develop with a time sequence typical of other media (e.g. writing).

To better use these peculiarities, thought Eikhenbaum, the structural principles of the cinematographic text would have to comply with two preferential options, one paradigmatic and the other syntagmatic. The paradigmatic option consisted in asserting the conventionality of the image (its *Zeichenbeziehung* as Freud would say) in a head-on contrast with the naturalistic values of photographic reproduction; the syntagmatic option consisted in emphasising the discrete (or potentially discrete) nature of the formal unities placed in a reciprocal relationship following a short, markedly divided montage. These two requisites are therefore totally comparable to Freud’s *Bilderschrift*. But Eikhenbaum underscored another aspect concerning

24 On this concept, see P. Montani, *L’immaginazione intermediale* (Rome-Bari: Laterza, 2010).

25 See R. Taylor, ed., *Russian Poetics in Translation*, vol. 9: *The Poetics of Cinema*. (Department of Language & Linguistics: University of Essex, 1982); S.M. Eisenstein, *Towards a Theory of Montage* (London-New York: Tauris Academic Studies, 2010).

26 B. Eikhenbaum, “Problems of cine-stylistics”, trans. R. Sherwood, in R. Taylor, ed., *The Poetics of Cinema* (Oxford: RTP, 1982): 10-21. My italics.

not the *construction options* but the *structural conditions* of understanding a film, arguing that the image plane in the cinema is always accompanied by the articulation of “inner speech” in the spectator’s mind. So, the cinematic experience has to proceed via a *constant integration of image and language planes*, more akin to a process of *reading* than a prolonged and guided form of contemplation.²⁷ Returning to the parallel with Freud’s reflection on the figures of the dream-work, we could say that, in films, the autonomous expressive and pathemic resources of the image come together in a *constant relationship* with the broader cognitive resources accessed by linguistic thought.

Remaining largely on the wavelength of Eikhenbaum’s theories, Sergei Eisenstein pushed himself even further forward in the same 1920s’ time-frame, especially from a design perspective. In short, he believed that the discursiveness of cinema could function as a device that takes the spectator into close contact with the semiotic operations that enable the imagination to give sensible content to concepts. That is, it could explore the key imaginative performance that Kant called “schematism”. A performance that, unsurprisingly, we have already referred to regarding its relationship with dream-work. Eisenstein called this cinema “intellectual” because, from the political perspective that excited him at the time, the cinematic experience promised to considerably alter the spectators’ “power of judgment” (to use another Kantian term), training them, for instance, in dialectical thinking, as we read in one of his notes for the planned film adaptation of Marx’s *Capital*.²⁸

Although Eikhenbaum and Eisenstein’s theories cannot be generalised, we can agree on the fact

²⁷ On the complex intermedial nature of reading, see S.B. Trasmundi, S.C. Cowley, “Reading: how readers beget imagining”, *Frontiers in Psychology* 11: 531682 (2020), doi: 10.3389/fpsyg.2020.531682.

²⁸ On this subject, see an important work by E. Vogman, *Dance of Values. Sergei Eisenstein’s Capital project* (Zurich-Berlin: Diaphanes, 2019).

that, throughout the silent film period, the treatment of cinematographic images largely adhered to the general *Bilderschrift* principles discussed here, and often invented new figures of them. We can also agree that, whatever its strengths and weaknesses, this trend was destined to undergo a marked shift after the introduction of sound, which could inevitably be expected to produce – and Eisenstein was one of the first to denounce this²⁹ – a strengthening of the reproductive and illusionistic effects of the film image and an ensuing increase in the naturalistic understanding of the film. From that moment on, the cinema pursued different paths which we cannot follow here although it may be interesting to ask what transformations would have been seen in the “scriptural” direction I discussed briefly at the start of this section.³⁰ We must instead ask ourselves, and I shall do so rapidly below, whether the fundamental principle embraced by this direction, namely the activation of a critical countermovement *physiologically correlated* to the regressive nature of the image, reappeared elsewhere. And how it could also concern VR where the regressive movement, as mentioned at the beginning, reaches the extreme condition of a hallucinatory event.

Before proceeding we should again stress the *relational*, and more precisely *intermedial*, nature of the critical countermovement which accompanies the regressive process of the imagination – and thus also presumably its extreme outcomes in the hallucinatory version of VR. Against this backdrop, I shall conclude by touching on two different spheres of exemplification. The first concerns the spontaneous practices of *syncretic writing* in use on the Web for about 20 years now and which are increasingly widespread among its users. In the second, I shall present some brief comments on how the intermedial device

29 See S.M. Eisenstein, “Buduščee zvukovoj fil’mu. Zajavka”, in Id., *Izbrannye Proizvedenija v šesti tomach. II* (Moskva: Iskusstvo, 1963-1979): 15-16.

30 I have done so partially in P. Montani, *Emozioni dell’intelligenza* (Milan: Meltemi, 2020).

has been managed in two remarkable recent installations: *Carne y arena* by Alejandro Gonzales Iñárritu (2017) and *VR_I* by Jilles Jobin (2018).³¹

It is a fact that the birth of the interactive Web supported the emergence of a form of *syncretic writing* that does not merely combine image, word and sound but also very frequently exploits their reciprocal relations to obtain significant effects of meaning from this intermedial confrontation – for the moment predominantly tuned into a playful, ironic and paradoxical register (I am thinking of all the “meme” forms). As well as not excluding significant evolutions and further differentiations, this aspect in itself already guarantees great (and spontaneous) reflexive control of the semiotic material manipulated.³² I have suggested calling this practice “extended writing”, adding that significant innovation might develop in the technologies of human expression. Indeed, the first thing to do is to study the internalisation processes and feedback on the imaginative and cognitive conduct of those using it (but it is a mass phenomenon).³³ I am keen to stress here that the regressive values linked to the image in extended writing are placed in a constant, systematic and plastic relationship with several critical and intellectual distancing practices, often of a distinctly intermedial nature. That is to say, they are conceived to exploit the effects of meaning ensuing from the re-mediation and comparison of different media.

The two installations mentioned above are important not only for their uncommon design complexity but also and primarily for their intermedial tone (i.e. distanced and reflexive), albeit diversely interpreted in the two cases. In

31 The two installations could be visited at the Fondazione Prada in Milan (2017) and the Istituto Svizzero di Roma (2018), respectively.

32 See P. Montani, “Materialità del virtuale”, *Agalma. Rivista di studi culturali e di estetica* 40, no. 2 (2020): 11-18; and “Apology for technical distancing. But beware the feedback!”, *IMG: Interdisciplinary journal on image, imagery and imagination* 3 (2020): 264-281.

33 The issue of “extended writing” should be included in an extensive case study of technological aesthetics, as well illustrated recently by V. Gallese, “The aesthetic world in the digital era. A call to arms for experimental aesthetics”, *Reti, saperi, linguaggi* 9, no. 17 (2020): 55-84.

both, visitors realise that the VR is simply a *part* of a broader experience that can internally implement in various ways what I have just described as a critical countermovement. I shall conclude by indicating the essential coordinates below.

Carne y arena is a journey in four stages, the second of which contains a VR installation. Here, the visitor – alone and free to move around – finds him/herself spending six minutes in a desert zone with a group of Mexican refugees trying to cross the US border but being violently driven back by an American army patrol.³⁴ In the first space, visitors are asked to remove their shoes and socks and place them in a locker from which they will collect them later. This is a key strategic move because during their mobile permanence in the virtual environment their bare feet will make them constantly proprioceptively aware of an essential split (*Virtually Present, Physically Invisible* is the installation's astute subtitle). A walkway awaits when they exit the "arena", after retrieving shoes and socks, from where the visitors can catch a glimpse of what is happening in the semi-dark space of the virtual simulation by looking, if they so wish, through the gaps between the wooden planks of a wall. This is a further distancing from the powerful engagement just experienced. The walkway leads to a final room where, free to decide how long to stop at each one, they can watch video clips of the migrants narrating details of the episode to which the visitors have been invisible witnesses and what happened to them afterwards. Their

34 I dwelled more analytically on the Iñarritu installation in P. Montani, *Tre forme di creatività*. See also F. Casetti, A. Pinotti, "Post-cinema ecology", in D. Chateau, J. Moure, eds., *Post-cinema. Cinema in the Post-Art Era* (Amsterdam: Amsterdam University Press, 2020): 193-217; A. D'Aloia "Virtually present, physically invisible: virtual reality immersion and emersion in Alejandro González Iñarritu's *Carne y Arena*", *Senses of Cinema* 87 (2018) <http://www.sensesofcinema.com/2018/feature-articles/virtually-present-physically-invisible-virtual-reality-immersion-and-emersion-in-alejandro-gonzalez-inarritus-carne-y-arena/>. For an important discussion of the "empathic" effects attributable to experiences in VR see A. Pinotti, "Autopsia in 360°. Il rigor mortis dell'empatia nel fuori-cornice del virtuale", *Fata Morgana* 39 (2019): 17-32. On the aesthetics of "unframed" images see P. Conte, *Unframing Aesthetics* (Milan-London: Mimesis International, 2020).

faces appear in high definition on small screens placed in niches around the walls of the room.

The important point here is that the VR is just *one of the many elements* in the installation and the overall experience stimulates visitors to engage in an intermedial reflection that invests them literally from head (equipped with visor and headphones) to toe (bare). The truly striking and forceful realism of the simulation thus finds its meaning within a complex narrative device. I shall add that even the patchy recollection of the six-minute VR simulation mentioned at the start of this article finds interesting justification within the context of this complex cognitive and pathemic experience.

VR_I is an all-VR installation and far more playful than *Carne y arena*. The artist is primarily a choreographer and paid particular attention to the fluidity of movement of the five dancers who inhabit the virtual space and define it with their performance. They take on very different sizes in the various phases of the event: gigantic and objectively threatening at the start but miniaturised and observable later on, almost as if in a lab experiment on a small quadrangular platform, and finally life-size. Five people enter the virtual space and each visitor's avatar can interact with the other four, not only on a haptic and sensorimotorial level (the hands have sensors) but also linguistically thanks to phono-acoustic equipment. The visitors find themselves in a metamorphic space resembling that of dreams: sometimes a boundless desert, at other times an urban landscape or a mountain-top loft with sweeping views down over a wide valley. The environments are always clearly identifiable and their subsequent development follows the rhythm of the dancers and the spatial harmony created by their movements. It is also significant that famous paintings (Matisse, Bacon) are hung on the walls of the loft interiors. Basically, the whole encourages visitors to let themselves go in an experience constantly tuned to a free

reflexive register and they quickly realise that the rhythmic play between the different spatial dimensions is one of the core themes of the choreographic flow they are engaged in, as too is the doubling of the performance (the dancers giant or miniaturised, the paintings), the comparison between the dimensions and the free exchange of dialogue about what is seen and happening. We could perhaps describe *VR_I* as a lucid intermedial dream which can be realised without any forcing by an embodied imagination fundamentally reconciled with its less docile partner: language.

Conclusions

- The *hallucinatory immersiveness* of VR must, just like that of dreams, be understood and studied against the backdrop of the network of significant *relations* it can entertain with other performances, for example inferential, of an embodied imagination. It seems inadvisable to isolate it from this broader context.³⁵
- The *regressive aspect* characterising the specific hallucinatory immersiveness of dreams must be understood primarily in terms of the neurophysiological functions (synaptic pruning, plasticity, resetting of inferential devices) attributable to the movement which allows the brain-mind to return to the situation in which the work of the imagination autonomously conducted cognitive performances that would, in a subsequent phase, be guided by linguistic thought.
- It is in this regressive sphere³⁶ that, remaining with Freud, we see the particular resources of a *significant link between image and writing* (a *Bilderschrift*). It is a link that very early cinema

35 A critical-genealogical investigation into the life of media conducted in terms of the assemblages or true ecosystems, in which each time they assume a structural positioning and a cultural meaning, characterises the work of Francesco Casetti. See lastly and also for some significant analogies with the issue of immersiveness, “The Phantasmagoria: an enclosure and three worlds” (forthcoming).

36 A “regression in the service of the ego” we could say, using a fine expression introduced by E. Kris, *Psychoanalytic Explorations in Art* (New York: Schocken Books, 1967), but the issue should also be addressed from a broader disciplinary perspective in terms of the adaptive and evolutionary advantages ascribable to the work of the dream imagination.

interpreted predominantly as an *intermedial comparison*, i.e. a comparison-integration of different media (starting with image and verbal discourse) such as to combine a critical and reflexive countermovement constantly and systematically with the naturalistic and quasi-hallucinatory reception of the film.

■ This same countermovement is perceived today in the spontaneous phenomenon of *extended writing* which can be recorded on the Web and in the design of some major *installations* in which VR features, in various ways, as *a component* of a more complex and “scriptural” narrative device in the broadest sense.



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