

RUI MATOSO**OPERATIVE-IMAGES AND PHANTOM-
IMAGES - THE SYNTHETIC PERCEPTION
MEDIA IN LATE HARUN FAROCKI**

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Abstract:

The images produced by cameras mounted on the front of projectiles, Farocki designates them as operative-images. The operational function of these images is to serve an automated vision machine, programmed for the detection of targets and re-orientation of the route of the missiles. The most important feature of technical images, according to Vilém Flusser, is that they materialize certain concepts about the world, precisely the concepts that guided the construction of devices that shape them. Thus, photography, very unlike automatically record impressions of the physical world, transcodes certain scientific theories into images, or to use Flusser's own words, turns concepts into scenes. We suggest that the final stage, the perfect crime, of *visionic* technologies would be the production of synthetic images not intended for the biological human eye, as hitherto, but for the artificial vision - vision synthetically prepared by the cybernetic ideology of control. Today is impossible to describe the development of the audiovisual without also talking about the development of virtual imagery and its influence on human behavior or without point to the new industrialization of vision and the growth of a big market for synthetic perception, with all the ethical issues that this entails. Finally, we propose that to understand a significant part of Harun Farocki's late work would also be useful the concept of *neural-image* as a component of a networked media practice, related to the ubiquity of digital technologies but also with the presence of surveillance devices in our contemporary visual culture.

Keywords: Harun Farocki - Operative-Images - Surveillance - Synthetic Perception – Neural Image



1. AN APPROACH TO HARUN FAROCKI'S WORK

Harun Farocki (1944-2014), began making films in 1966. He grew up in Hamburg but moved to West Berlin, where he lived from the early 1960s. He was among the first students who entered the *Berlin Film & Television Academy* (DFFB), but was expelled in 1968, along with others, due to considered subversive activities. He started working making short films for television, but settled between 1970 and 1980 as recognized filmmaker with a political profile, through a series of feature films in part self-financed, as: *Zwischen den Kriegen* (*Between Two Wars*, 1978) *Etwas wird sichtbar* (*Before Your Eyes*, Vietnam, 1982) *Betrogen* (*Betrayed*, 1985) and *Wie man sieht* (*As You See*, 1986).

The work of Harun Farocki was initially produced in the documentary film field with political concerns that approach him, but also distinguish, to filmmakers like Chris Marker or Jean-Luc Godard. Its production is an integrated and metamorphic corpus, constantly adapting to the techno-aesthetic proliferation. The medium he uses depends essentially on the critical efficacy compared to visual devices in circulation. Since its long former film, *Nicht löschesbares Feuer* (*Inextinguishable Fire*, 1969)¹, to the most recent installations as *Visibility Machines* (2013, with Trevor Paglen)², the effectiveness and the critical potential of his works resides in the analysis and the deconstruction of the forms of domination and governmentality established in the multiple fields of power.

If at the beginning of Farocki's career he assumes an activist profile in the political and social confrontation over the war in Vietnam, later he confronts us with an empirical and conceptual research around the categories, uses and effects of the images (operative-images, phantom-images, ...) and technologies of the visible / invisible in the field of war and military industries, prisons or in the public space in general.

1) <http://www.harunfarocki.de/films/1960s/1969/inextinguishable-fire.html>

2) <http://www.umbc.edu/cadvc/exhibitions/VisibilityMachines.php>

The multidimensional Harun Farocki's work is linked to the critical deconstruction of processes that constitutes the phantasmal visibility (virtual, digital, ubiquitous, ...) patented in techno-aesthetic devices, but also in its relationship with the semiotic and symbolic invisible, that is, with the ideological and discursive formations of the image. In both cases, it is, therefore, to access an underlying stratigraphy of the production of the images, for recognizing the invisible within the visible, or «by detecting the code which is the visible is programmed» (Elsaesser, 2004, p. 12).

His films incorporate *found footage* from cultural and historical image archives (television, press, cinema,...); but also from conventional surveillance cameras (*Prison Images*, 2000)³ and operative-images as those algorithmically used in guided bombs during the Gulf War (*War at Distance*, 2003)⁴.

A film by Michael Klier - *The Giant (Der Riese*, 1983)⁵- composed exclusively from *found footage* videos, generated by surveillance cameras installed in the public space, is considered one of his main cinematic influences, in particular for his *Prison Images*. The fact that Harun Farocki was also dedicated to image theory in the context of visual culture and media ecology in contemporary societies, does that his creative process have been called a *metacinema* (Elsaesser, 2008, p. 37), where the production methods and the inclusion of new imaging categories are questioned in terms of what can be considered as *essay-cinema*, ruled by a dialectical montage appointed as *Verbund* (Compound). *Verbund* means, as a mounting method, the symbiosis between antagonistic elements, but as further clarifies Thomas Elsaesser:

Farocki applied the *Verbund* method metaphorically to his own work, to signal how he used different media—television commissions, film reviews, political filmmaking, radio plays, book reviews—so the work done for one as-

3) <http://www.harunfarocki.de/films/2000s/2000/prison-images.html>

4) <http://www.harunfarocki.de/films/2000s/2003/war-at-a-distance.html>

5) <http://www.medienkunstnetz.de/works/der-riese/> ; https://youtu.be/xLCsJuFBi_0



signment could feed into several of his other projects. But Verbund is also a useful term if one wants to understand the principle behind Farocki's practice of separating and joining. It was typical for him to join what wants to hide the nature of its connection (famously, security prisons and shopping centers via spatial dispositifs of surveillance), and to separate what we are used to thinking of as belonging together (for instance, work as wage labor) (...) by proposing a more organic or modulated relation between things (Elsaesser and Alberro, 2014).

In the aforementioned *Inextinguishable Fire*, Farocki films himself sitting at a desk while reading the testimony of Dan Thai Bihn, a victim of a bombing of Napalm to his village. After that, he launches the following questions: *How can I show you the Napalm in action? How can I make you feel the burns inflicted by Napalm?* His answers excludes the use of any iconic or indexical image that represents that reality, since the effect on the viewer would cause the eyes shut to the visible horror, then would refuse this visual memory, and then avoid to know the facts and understand all the surrounding context (Elsaesser, 2004, p. 17).

However, contrary to what we would consider a politically engaged cinema, Farocki waiver emotional expressions and the supposed empathy of the viewer. Beyond to any critical and typical revolutionary *Zeitgeist* from the late sixties, he develops a non-cinematographic cinema in order to avoid any hint of melodrama or favor the manipulation of identities, in favor of a self-critical image as a constituent of the productive forces and the power of industrial civilization (Medina, 2014, p. 8).

The solution to provide the viewer with an approach to Napalm effects is achieved by the performative gesture of burning a cigarette on his forearm skin (Image 1.). Making use of metonymy (the cigarette burns at a temperature of 200 ° C, Napalm to 3000° C), Farocki transmutes abstract horror images of real Napalm burns into a visual performance of bearable suffering. Thus refuses the sideration caused by the violent spectacle of war images offered

to the consumer's incredulous look, because it recognizes that the «violence situations of aggression is immediately linked with the management of the visible and the transmission of speech» (Mondzain, 2009, p. 72). In other words: «never the simple reproduction of reality can say something about the reality, because the true reality became functional reality» (Benjamin, 1987, p. 106).

Harun Farocki is not intended to prevent or censor the violent images⁶ but rather cancel the mediations produced by the market of the visible and disarm the stereotypes, the bad conscience and the defenses of visual reception; for so, says Georges Didi-Huberman, «open eyes to the violence of the world that is inscribed on the images» (2013, p. 35). In *Inextinguishable Fire*, Farocki prescribes another *distribution of the sensible*⁷ when he choose to transmit the invisible speech⁸ of the victim, giving to the voice «the place where it can be heard» (Mondzain, 2009, p. 71).



Image 1. Harun Farocki, *Inextinguishable Fire* (1969) - video still.
[Courtesy Harun Farocki GbR]

- 6) Also because «thinkink the image is to answer the fate of violence» (Mondzain, 2009, p. 73).
 7) Cf. Ranci re, Jacques (2000). *Le Partage du sensible: Esthetique et politique*. La Fabrique  ditions.
 8) «The invisible, the image is the word order. This does not produce any evidence ... »(Mondzain, 2009, p. 30)



The above-mentioned works allow us to understand that Farocki's work is focused mainly on criticism of brutal and symbolic violence / symbolic power, in various socio-political environments, in the *society of the spectacle*, in the *disciplinary society* or *control society*, particularly in the spheres of war, labor, entertainment or surveillance. For the construction of a critique of violence is crucial to know it, to describe it and be able to observe it, i.e., deconstruct their artifacts, identify and analyze the relationships, which implies disassembling and reassembling the state of things. This arduous task then is to challenge three social areas defined by Walter Benjamin in *For a critique of violence*: Questioning the technology, history and the law (Didi-Huberman, 2013, p. 35). After *Inextinguishable Fire* and Vietnam war - the first war mediated by television⁹- the director will again focus on the starting point of his research, but in another war and in another issue of the images.

Harun Farocki was not only director, artist, theorist of the media, image philosopher, but also a writer and professor. The presentation of his work was not confined only to the spaces of the movie theater, that becomes an increasingly limited space in a market context driven by commercial theaters. His first installation in art galleries and museums dates back to 1995, with the *Schnittstelle* project commissioned by the *Lille Museum of Modern Art*, which examines the question of what it means to work with existing images rather than producing his own new images¹⁰. Later, in the year 2000, he developed three multi-channel installations: *Eye / Machine*, *Music-Video* and *I Thought I was seeing Convicts*¹¹.

9) <http://www.museum.tv/eotv/vietnamonte.htm>

10) <http://www.harunfarocki.de/installations/1995.html>

11) <http://www.harunfarocki.de/installations/2000s/2000.html>

2. OPERATIVE-IMAGES / PHANTOM-IMAGES

*It is evident that the nature that addresses the camera
is not the same as that goes to the eye.*

Walter Benjamin

Compared with *phantom-shots*¹² from the beginning of cinema in the 20th century, vulgarized in the sequences filmed in trains where the camera is set in a place inaccessible to the human eye (non-subjective), Harun Farocki notes that nowadays there is a new category of phantom-images with subjective properties: «We can interpret the film that takes up the perspective of the bomb as a phantom-subjective-image. The film footage from a camera that is plunging towards its target, a suicidal camera, stays in our mind.» (Farocki, 2004, p. 13). This new category of phantom-images, mediated massively during *Gulf War* (1991), emerged with the cruise missiles in the 1980's (*smart bombs*).

The television broadcasts of the first war in Iraq (started with the operation *Desert Storm*), marked by the monochrome images on TV screens, puts several questions to several philosophers, Jean Baudrillard or Paul Virilio are two of them who more profoundly studied the phenomenon¹³. Farocki, for its part, maintains that those never seen images¹⁴ made the war similar to a computer game for children (Farocki, 2004, p. 13). Images without people, uninhabited war scenarios, as if it were possible the permanence of a war without human beings, only between machinery and their technical images, in a cycle of incessant cybernetic feedback loops.

12) Cf. "Phantom rides" <http://www.screenonline.org.uk/film/id/1193042/>

13) Noam Chomsky (*Gulf War Pullout*), Paul Virilio (*Desert Screen: War at the Speed of Light*), Jean Baudrillard (*The Gulf War Did Not Take Place*) Or Laymert Garcia dos Santos (*The TV and the Gulf War*), among others.

14) Although unpublished in this context, the relationship between technical images and the war has been effective since the First World War. The photography was immediately used for aerial reconnaissance of enemy's territory with cameras installed in airplanes. In World War II, the British allies who were first manned their bombs with cameras for monitoring purposes of the success or failure of the bombing. However the German V2 missiles were also equipped with cameras and telemetry systems to allow for correct routes of missiles in flight.



The images produced by cameras mounted on the front of projectiles, Farocki designates them as well as operative-images. The operational function of these images is to serve an automated vision machine programmed for the detection of targets and re-orientation of the route of the missiles. *Search-Target Program* is one of that computer software designed to discover, remember and recognize pixel patterns, and has been also used for various industrial purposes, particularly in the field of automation and robotics.

Marie-José Mondzain asks if *the image can kill?* (Mondzain, 2009). Harun Farocki responds decisively that there are images (operative-images) serving the annihilation of human beings. The answer lies in the film *Erkennen und Verfolgen 15*¹⁵ (*War at distance*, 2003), whose images were also used in the installation series *Eye / Machine* (2000-2003).

Just within the context of a synthetic and spectral vision system, where the mediated images to the public were the same as the machines used to kill people and destroy cities, Jean Baudrillard states that *Gulf War* did not take place, because the visual and mediated representation of the war was only addressed to the “vision” of the digital computer algorithms. Images of a ghost war circulating abundantly in the public sphere and in the domestic space, a pixelated and sanitized war, displayed without traces of meat or bloodshed.

After all, the *cold gaze* of the machine is also the «Medusa’s look: mortifying what it sees, making images transitive, turning them into objects, specimen, evidence» (Elsaesser, 2008, p. 43). It is already another mythology, different from that of the archaic Medusa, that instead of raising the paralyzing horror evident in the heinous events of history (Shoa), and for which the greatest merit of Perseus was not to have severed her head but to exceed the fear of looking through the reflection in the shield of Athena; thus allowing the unspeakable

15) *War at distance*. <http://www.worldcat.org/title/erkennen-und-verfolgen-war-at-a-distance/oclc/775783077>

horror is reflected, extended and reconstructed as an image, and may be a source of conscious awareness not just of daze (Didi-Huberman, 2012, p. 223).

The *cybermedusa* (operative medusa) does not allow representational mediation by the technical image, it is now a metamorphic digital-being and is outside the scope of representation, constructed through code, algorithms and software, and born from a pact between the high-tech industries, security experts and the new military-entertainment consortium that long ago supplanted the military-industrial complex.

We are thus in a paradoxical ambiguity. On the one hand, there are no images that, historically, do not relate to the human eye; but on the other, a computer in their task of processing visual information does not require images, as its input are the electrical signals given by the binary encoding of each pixel. But, when we ask who are, in spite of all, the recipients of these images produced for algorithmic consumption? We should have to respond that are computers, not humans. This novelty in the field of production and reception is a new milestone in the social history of technical images, as well as in the history of visual culture, because operative-images are not produced to the human eye as had hitherto been the “conventional” technical images produced for scientific, aesthetic, educational or entertainment purposes. Thus formed a new scopic-machinic regime, in which the images are re-materializing themselves, wishing to become operational and proactive, not just superficial and passive. How would say W.J.T. Mitchell, it is necessary to go beyond the dominant issues surrounding the rhetoric and interpretation of images, it is now necessary to know what the images want, by moving the issues from the field of uses and effects, to the field of desire: «What pictures want is not the same as the message they communicate or the effect they produce; it’s not even the same as what they say they want. Like people, pictures don’t know what they want; they have to be helped to recollect it through a dialogue with others» (Mitchell, 1996, p. 81).



In the installation *Eye / Machine* (image 2.), Farocki reveals a deeper reflection on the operative-images, images although not being abstract does not comply with the representational function, they only form part of an operation that is used to store and recognize visual patterns. Operative-images are the product of the development of a new generation of intelligent machines capable of defining a new visual space and a post-human vision.

In his essay entitled *Phantom Images* (2004), Farocki calls Roland Barthes's *Mythologies* for an approach to the distinction between the two types of images, and between the object-language and metalanguage (Barthes, 2009, pp. 237-239). The object-language is one that emerges from the operational relationship and transitive to the issue - the language of man producer/operator - is therefore an operative language that calls for the modulation of the transforming action in the world (political language); for instance, the lumberjack tells his gesture with the tree and not the tree's image, in this case the words tend to mean the gesture instead of the representation. The metalanguage does not speak of the exploitation of the tree, it is no longer the subject of labor, is just one more among many available images by which the mythology develops as mediation and narrative.

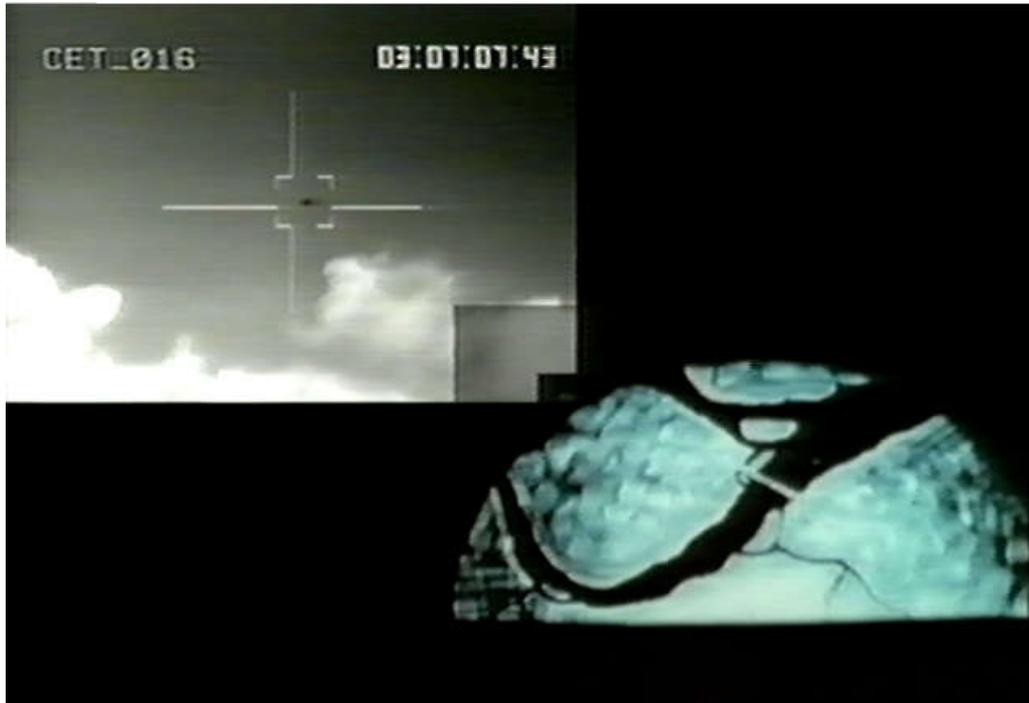
As the axe of Barthes's lumberjack is not a simple objectification of rationality – because is also a tool that communicate with the human senses; likewise operative-images, used as *data input* for software, concomitantly generate phantom-images, i.e., images that come into being in the public sphere as potential generating narratives, mythologies or ideologies. About this paradox, David Tomas (2014) explains that:

These purely instrumental images had no actively cultivated visual properties or aesthetic assets. The fascination they sponsored in a television audience resided in the logic and precision of the alien intelligence they served: its automatic and relentless capacity to navigate through space and time in order to attain its objectives, and the final seconds of transmission with its implacable premonition of impact, destruction, and death. (Tomas, 2013, p. 234)

In Farocki's opinion, if we currently have interest in images that are part of an operation is because we are tired of non-operative-images (allegorical, metaphorical, mythological) and because we are exhausted from dealing with metalanguages. That is, weary of systematic practice of re-mythologizing daily and saturated life by the constant change of images, diffused by programs tailored produced and presumably designed to mean something to the audience. After all, perhaps the film and television industries have been exhausted themselves due to overproduction of audiovisual material.

The operative-images challenge the artist interested in the production of non-authored or unintentional meaning. However, Farocki points out that the US Army has exceeded all artists on the ability to see and recognize the *visible unconscious* (Farocki, 2004, p. 18). With this reference to the Walter Benjamin's idea of *optical unconscious*, Farocki positions the military industry at the forefront of the production of the phantom-operative-images, the same way as psychoanalysis has provided us with the experience of pulsional unconscious¹⁶. So, we must not only see technical images as the extent possibilities of knowledge, nor the cameras just as an expansion of vision, but as a method to effectuate visual information operations.

16) «The camera takes us to the optical unconscious, as psychoanalysis to unconscious of impulses.» (Benjamin 1992, p. 105).



*Img. 2. Harun Farocki, Eye / Machine I (2001) - video still.
[Courtesy Harun Farocki GbR]*

3. DOUBLE-BIND AND TECNO-AESTHETICS

*Militarism is a kind of visual organization
of social energies.*

Marshall McLuhan

In Walter Benjamin's understanding there exists between the two unconscious – pulsional and optical – the most closer relations:

The multiple aspects that the camera can register of reality are located largely outside the spectrum of a normal sensitive perception. Many distortions and stereotypes, changes and disasters that the visual world may suffer in the film really affect this world in psychosis, hallucinations and dreams. Thus, the camera procedures are equivalent to the procedures through which the collective perception of the public appropriates the individual modes of perception of psychotic or dreamer (Benjamin, 1992, p. 105).

Thus, we may understand that the operative-image performs a *double-bind* short-circuit, that fulfills the dual *schizophrenic* function. An instrumental, machinic and coded relationship, as a destroying tool in the service of *smart bombs*; but also as the function of media coverage, spreading phantom-images as a new mythology and an upgrade for visual culture drawn from unintentional images, non-authored but “subjectivated” by the receiving act. Thus contributing to the formation of a visible unconscious giving visible aspects of tangible reality but mediated through images that are inaccessible to natural vision, thereby transforming the human eye in an anachronistic vision organ, declared overtaken by the demands and acceleration of technoscience.

In the series of installations entitled *Serious Games*¹⁷, project that began in 2009, Harun Farocki investigates how those computer games (image 3), created with virtual images of the Iraq war and developed by specialized companies in simulation design¹⁸, are also used in therapeutic processes based on immersive psychotherapies - *Virtual Reality Exposure Therapy*.

17) <http://www.harunfarocki.de/installations/2010s/2010/serious-games-i-watson-is-down.html>

18) One of these simulators created for therapeutic purposes is rightly referred to as *Virtual Iraq* and marketed by the company Virtually Better, Inc. (<http://www.virtuallybetter.com/virtual-iraq/>)



Img. 3. Harun Farocki, *Serious Games* - video stills. [Courtesy Harun Farocki GbR]

The relationship between the psychic unconscious and the operative-image can be examined in war games used by the US army as simulators for various purposes, from training and recognition (perception and cognition) to therapeutic purposes. These display systems *working-through*¹⁹ digital treatment in troops suffering from the disorder of *Post-Traumatic Stress of War*, thus creating an isomorphism between the phase of pre-battle training in virtual reality simulators and post-trauma therapy also through the same technologies.

Is nonetheless disturbing that the images used to prepare soldiers for war are the same that serve to heal the traumas, but with a small difference, is that therapeutic images have lower quality due to the smaller budget for therapies than those for war trainings (Farocki, 2014: 116). One of the possible conclusion, says Orit Halpern, is that «we are being conditioned to never experience war as pain or

19) *Working-through* is a concept introduced by Sigmund Freud in 1914, for expressing “the crossing work” as the ability to redraw the crisis, feelings and inner conflicts.

trauma» (Halpern, 2015). The affinities between trauma and virtual reality, or between trauma and computer code, are also recognized by Katherine Hayles:

Experienced consciously but remembered nonlinguistically, trauma has structural affinities with code. Like code, it is linked with narrative without itself being narrative (...) This possibility was explored in the early days of virtual reality, through simulations designed to help people overcome such phobias as fear of heights, agoraphobia, and arachnophobia. The idea was to present a simulated experience through which the affected person could encounter the phobia at a distance, as it were, where fear remained at a tolerable level. (Hayles, 2006, p. 141)

The alliance between military and visual culture industries is, of course, the result of a relationship whose strong bond was built in the production and dissemination of military propaganda. To this bridge between artistic creativity and war destruction, we should obviously join the automation industry (cybernetics and semiotics) to have a global «ghostly perspective of the war, a perspective of an imagined subjectivity of war» (Farocki, 2004, p. 20).

Later recovered in *Visibility Machines* (2013) the category of operative-images has also its place in the *Operational Art* (Canales, 2014), a term used in military manuals to designate operations other than direct war, as those that Paul Virilio refers to new strategies based on “preventive war” allowed by the virtualization of appearances.

The computer wargames industry, by incorporating image scenarios from the vast military archives, give rise to the development of strategic partnerships founded by common techno-aesthetic regime to war and the video games industry. The business is made this way: the military provides images and mapping of territories and software companies provide augmented reality algorithms, modulation and



real-time interactivity. One of these cases, reported by Farocki, is the game *Full Spectrum Warrior*²⁰, whose production was even funded by the US Department of Defense (Farocki, 2009, p. 222).

War simulators for recreational use, for military training purposes or post-traumatic stress therapies, takes place at the same screen that «creates a new liturgy in which new transubstantiations have to play (...) the screen establishes new relationships between mimesis and fiction » (Mondzain, 2009, p. 42), giving rise to a dispositif with fusional and *confusional* powers in the constitution of the synthetic and phantasmic imagery in the contemporary postmodernity, imposing a whole new logistics of perception²¹ able to introduce the invisibilities of a synthetic perception/vision, contaminating the vision/knowledge dialectics and, consequently, the ultimate form of industrialization: the industrialization of the non-gaze (Virilio, 1994, pp. 70- 73).

It follows the creation of a haunted reality, erected by an automated visibility, whose reality show is, like the phantasmagoria of the eighteenth century, resulting from a positivist and *alotechnological* progress (Sloterdijk, 2010) of the high-tech industries, driven as it is known by the increasing militarization of societies.

As industrial robotics succeeded worker, making obsolete the effort of the human arm, the artificial vision devices are now part of the overall process of replacing the human eye and simultaneously the industrialization of synthetic perception, as we can find in urban surveillance systems, facial recognition and identification of individual profiles or natural description of images²², in short, a general development framework of artificial intelligence and perception.

20) http://en.wikipedia.org/wiki/Full_Spectrum_Warrior

21) Despite the obvious proximities, is not exactly the correlation between war and cinema that interests us in this article. However, to deepen this relationship is fundamental to read the work of Paul Virilio, namely: *War and Cinema: The Logistics of Perception* (2009).

22) <http://googleresearch.blogspot.pt/2014/11/a-picture-is-worth-thousand-coherent.html>

In short summarize, we can conclude that the techno-aesthetic double-bind operates as a metastable feedback mechanism between the operative image and the phantom image, in the simulation between therapy and war, or between ghost and trauma. In this framework, the soldiers are trained for fighting through virtual reality simulators, and then afterwards they participate in military operations in real scenarios, which in turn are subject to the traumatic events of the war battles, and then they return again to immersion into virtual reality, for therapeutic purposes.

4. CODA: IMAGES IN SPITE OF ALL²³ AND FURTHER...

Unless you are Paul Klee, it is not easy to imagine artificial contemplation, the wide-awake dream of a population of objects all busy staring at you.

Paul Virilio

Trevor Paglen²⁴, an artist who has closely followed the latest phase of Farocki's career, namely in the exhibition *Visibility Machines*, recognizes that currently the operative-images have become invisible, without, however, had ceased trading on reality: «It became clear that machines rarely even bother making the meat-eye interpretable versions of their operational images that we saw in *Eye/Machine*. There's really no point. Meat-eyes are far too inefficient to see what's going on anyway» (Paglen, 2014).

This disappearance, in spite of all, brings us to a sense of expanded photography that we can find in Vilém Flusser and Paul Virilio. The most important feature of technical images, according to Flusser, is that these materialize certain concepts about the world, precisely the concepts that guided the construction of devices that shape

23) This title refers directly to Didi-Huberman, Georges (2004). *Images malgré tout*. Paris. Éditions de Minuit.

24) <http://www.paglen.com/>



them. Thus, photography, unlike automatically record impressions of the physical world, transcodes certain scientific theories image, or to use the words of Flusser, turns concepts into scenes (Flusser, 1985, p. 45).

With digital image and its processing through software, the notion of program and user (employee) envisioned by Flusser takes a new meaning within the operative-images, this kind of images no longer requires the “employee” to be produced and activated. The digital image as *vision machines - seeing machines* (Paglen, 2014b) It covers a whole new paradigm of media ecology and virtually all image production technologies, from iphones, airport security scanners, electro-optical recognition from satellites, QR code readers, facial recognition surveillance cameras, recognition systems for automatic enrollment or *Google Street View*. This definition has yet to include a network of actants elements (actors)²⁵ such as the metadata associated with the images, communication protocols, software, algorithms, and database archive systems. Or, as Jonathan Crary puts it:

Computer-aided design, synthetic holography, flight simulators, computer animation, robotic image recognition, ray tracing, texture mapping, motion control, virtual environment helmets, magnetic resonance imaging, and multispectral sensors are only a few of the techniques that are relocating vision to a plane severed from a human observer. Increasingly these emergent technologies of image production are becoming the dominant models of visualization according to which primary social processes and institutions function (...) Most of the historically important functions of the human eye are being supplanted by practices in which visual images no longer have any reference to the position of an observer in a “real”, optically perceived world. If these images can be said to refer to anything, it is to millions of bits of electronic mathemati-

25) Cf. Actor-Network Theory. Latour, Bruno (2005): *Reassembling the Social An Introduction to Actor-Network-Theory*. New York. Oxford University Press Inc.

cal data. Increasingly, visibility will be situated on a cybernetic and electromagnetic terrain where abstract visual and linguistic elements coincide and are consumed, circulated, and exchanged globally. (Crary 1990, p 2).

It was already expected, since Heidegger, that the conquest of the world as image (Heidegger, 2002, p. 117), the perfect crime of an unconditional realization of the world by the actualization of all data, the transformation of all our acts and all events into pure information (Baudrillard, 1996, p. 49), were made by the optimal stage of *visionic technologies* (Virilio, 1994, p. 59) through the production of synthetic image not intended for the biological human eye, but to the artificial vision built by the cybernetic ideology of control.

Today it is impossible, if we agree with Paul Virilio, to describe the development of the audiovisual without also talking about the development of virtual imagery and its influence on human behavior, or without pointing to the new stage of the vision's industrialization and the synthetic perception's market, with all the ethical issues that this entails, particularly for control and monitoring systems: «Having no graphic or videographic outputs, the automatic-perception prosthesis will function like a kind of mechanized imaginary from which, this time, we would be totally excluded» (Virilio, 1994, p. 60).

The relationship between the vision and the image can no longer be taken as the guideline of the construction of knowledge as it has been promoted since the Enlightenment, because since the image processing by computers is no longer supported by the anthropological semantics of the human eye. Consequently, Ernst and Farocki suggest recovering the media theory of Michel Foucault's discourse analysis and Claude Shannon's mathematical theory of communication. Because, for the first time the world archive of images can organize himself without the use of meta-data semantics, but according to its own criteria of data structure, like an endogenic visual memory in its own medium (Ernst and Farocki, 2004, p. 262). What new types of knowledge will be produced



from these images? What part of traditional knowledge can be transformed and what part can just disappear altogether?

Trevor Paglen, designates as *scripts* the basic and obvious function in a synthetic imaging system, as if it was its own gaze *style*. A *script* then it is a set of procedures that a *vision machine* (*seeing machines*) produces to see, understand and operate in the world (Paglen, 2014b). Here, the lacanian separation between the *gaze* of the digital camera and the human eye makes sense, not only because the gaze of the camera clearly grasps what the human eye can not, but the human eye also looks remarkably deficient in its historical and institutional construction. As if the control and surveillance devices were expanding beyond behavior, speech or body posture, in order to finally reach the sensory organs. And consequently, we can have some reasons to assert that human blindness is now confronted with the improvement of synthetic perception.

In this context is relevant to examine the connection between Paul Virilio and Gilles Deleuze contributions regarding the conceptual articulation around the *societies of control*, *time-image* and the post-avant-garde cinema. Gilles Deleuze used, after Michel Foucault, the notion of *societies of control* (Deleuze, 1990) to refer the societal modulation in which the virtues of dialogue, dissent and democracy are increasingly automated, through neuromarketing imperatives, *big data* and cybernetic *feedback* processes expanded to the whole of life²⁶, which are currently intensified in the configuration of telematic networks, as stated by Alexander Galloway and Eugene Thacker:

The network, it appears, has emerged as a dominant form describing the nature of control today (...) Perhaps there is no greater lesson about networks than the lesson about control: networks, by their mere existence, are not liberating; they exercise novel forms of control that operate at a

26) The pragmatic dilemmas are mainly focused on issues of privacy, intimacy, subjectivity and corporeality (data body).

level that is anonymous and nonhuman, which is to say material. (Galloway e Thacker, 2007, pp. 4-5)

About the cinema's developments in this cybernetic environment, we can consider that it is constituted a new regime of the immaterial image and simultaneously a new global model of political organization. It is a paradoxical cinema, created from images transduced between vision machines and algorithms, forming a vanishing horizon in which the images lose their ontological basis and convey the spectral invisibility of operative-phantom-images. Materializing images that are not intended for human gaze, but showing simultaneously the human condition and his subjection to the global apparatus of algorithmic and neurobiopolític governmentability²⁷.

Antoinette Rouvroy, invokes the concept of *algorithmic governmentality* as one that does not allow processes of human subjectivity: «algorithmic governmentality is without subject: it operates with infra-individual data and supra-individual patterns without, at any moment, calling the subject to account for himself.» (Rouvroy, 2012).

The power that deals with neuroplasticity is designated by Warren Neidich as *neuropower* (cognitive power), an homogenizing power of the subjectivities (noopolitics) via modulation of neuroplastic potential of the human brain, and therefore it has a fundamental role in the production of attention processes, which in turn traces certain memory circuits, thereby stabilizing certain neural networks - and not other ones- in a mechanism analogous to neurofeedback procedures. On this last point, says Neidich, the new focus of power would not be just the false reproduction of the past (analogous to manipulating files) inasmuch as the new territory of neuropower is not so much the handling of past memory, but the development of future memories (Neidich, 2013, p. 226).

27) «Neurobiopolitical: the ability to sculpt the physical matter of the brain, and its abstract counterpart, the mind.» (Neidich, 2006)



Cultural production, and more concretely, visual culture, is, of course, in a constant state of transformation as it responds to a changing environment, determined by the cumulative effect of an unstable multitude of immaterial and cybernetic relationships. To answer these assimilation crisis, culture creates new remediations²⁸ in the field of optical technologies. Warren Neidich (2006) suggests that a similar process is currently happening with the brain, something like a brain intensive remediation, through which the brain redirects and seeks alternative cultural connectivity on the images, language forms or social contingencies that end up being important in the processes of visual and cognitive ergonomics: activation of neural networks adapted and synchronized with the high-intensity of *high-tech* environments, saturated stimuli and emphatic images. It is amidst this brain and the empathic images synchronization, that the feedback mechanisms are now concentrated, generating a linguistic (coded) interface, between cultural consumption, brain and digital technologies.

In the time-image cinema, in which Deleuze (1989) recognizes a rupture from the sensory-motor schema inaugurated by the movement-image cinema of the silent movies, the image emerges as purely optical and aural, establishing relationships with virtual digital image and the mental image or mirror images. This new post-avant-garde cinema, formed by electronic images should transform the cinema, replace it or even mark his death:

The electronic image, that is, the tele and video image, the numerical image coming into being, either had to transform cinema or to replace it, to mark its death (...)
The new images no longer have any outside (out-of field), any more than they are internalized in a whole; rather, they have a right side and a reverse, reversible and non-superimposable, like a power to turn back on themselves.
They are the object of a perpetual reorganization, in

28) The theory of remediation by Bolter and Guisin proposes the history of the media as a complex process, in which all media, including new media, rely on older media and are in a constant dialectic with them. Cf. Bolter, Jay David and Richard Grusin (2000). Remediation: Understanding New Media. Cambridge: MIT Press.

which a new image can arise from any point whatever of the preceding image (Deleuze, 1989, p. 265).

Nevertheless there is a film approach²⁹ - which include Harun Farocki installations in museums and galleries³⁰- that results from a critical examination of the conjunction between ideology and technology or between cinematic forms and surveillance policies. A cinema of the globalized world duplicated by the virtual spectrum of information, that is also submitted to the militarization of cyberspace³¹: «The extent of the world has become, for military purposes, a network of images and information provided by planetary-wide satellite systems and data processors» (Roberts, 2014).

Finally, we propose that to understand a significant part of Harun Farocki's work, like *Eye/Machine*³² or *War at Distance*³³, would also be useful to call the concept of *neural-image* (Pister, 2012) as a component of a networked media practice, related to the ubiquity of digital technologies but also with the presence of surveillance devices in our contemporary visual culture. Research into the neural-image still requires the recognition of constituent properties in the modes of affection, overlapped between the neuroscience studies of affects and affective computing³⁴ developments. Therefore, it is important to note that the formation of the neural-image - operative images at the neural level - results from a transductive interaction between technological devices and the neural bases of affection.

29) Not to be confused with the so-called *Surveillance Cinema*, in which belong films that somehow represent the proliferation of surveillance devices in everyday life, such as *Enemy of the State*, *Minority Report*, *Panic Room* or *The Truman Show*. A more complete list of the same film genre can be found here: http://en.wikipedia.org/wiki/List_of_films_featuring_surveillance See: Dietmar Kammerer, *Video Surveillance in Hollywood Movies* (<http://www.surveillance-and-society.org/articles2%282%29/movies.pdf>) and Zimmer, Catherine (2015). *Surveillance Cinema*. NYU Press .

30) <http://www.harunfarocki.de/installations.html>

31) The Cybernetic project has been, since the second half of the 20th century fed by the media industries and network technologies, but primarily by the military infrastructure, corresponding to what Julian Assange describes as a *militarization of cyberspace*: it is like having a tank inside the room or a soldier under the bed, quips Assange for evidencing the infiltration of the military intelligence agencies in our most intimate sphere (Assange, 2013, p.10).

32) <http://www.harunfarocki.de/installations/2000s/2000/eye-machine.html>

33) <http://www.harunfarocki.de/films/2000s/2003/war-at-a-distance.html>

34) Cf. <http://affect.media.mit.edu/> and *Affective computing: challenges* (Rosalind Picard - MIT Media Laboratory).



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