The Eyes Have It—Evolution of the Ontology of Machine Vision

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Abstract

Since the twentieth century, machine visions have developed rapidly in the scientific and military fields, and the world has been condensed into an all-seeing picture. In today's world of networked communication technology, such machine vision has expanded dramatically, and its image archives have now become the world itself. The new machine vision clearly represents a new kind of media ecology, but it is also arguably the new visual problem of our time. In the deep entanglement of image, capital, and power, reality disappears, and humanity is redefined. This paper lists for kinds of eyes: Kino-eye, Robo-eye, Flying-eye, and A-eye, in order to examine the evolution of the subjectivity of visual machines from 20th century to nowadays exploring the contemporary situation of machine vision as a visual culture today and its context.

Keywords: machine vision, media art, AI art, visual culture

1. Introduction

The military use of photography accelerated the transition of the visual machine from non-human to impersonal: in World War I, with the newly-established Photographic Section of the American Expeditionary, aerial reconnaissance photography started to become a tool that supported warfare. The photographer Edward Steichen was one of the most influential figures in the then-new technology of aerial photography, and later in the war, he became the commander of the section. In order to scientifically mobilize a system that included up to a thousand people and a huge amount of visual material, Steichen ran a factory-like image production system, forming a standardized and industrialized model of equipment, procedures, and viewing methods.

Later, in the short essay The Instrumental Image: Steichen at War (Allen Sekula, 1975), the photo-theorist Allan Sekula used a series of wartime aerial photographs directed and collected by Steichen as an example of what he called the instrumental image: a vertical, flat, condensed, vast surface image with no reference to depth, an instrumental image can be described as the product of mechanical and technological presuppositions, in which all perceptual, intuitive understanding is excluded and replaced by the collaborative speed of propellers, machine guns, and breechblocks at the same time, these images no longer have any meaning other than as objective and correct responses to reality. To better read the desired information in the image, the instrumental image must be accompanied by a mechanical reading, and the logic of human language will be less significant here than the logic of the factory.

A similar view is taken by the media theorist Jonathan Crary in *The Techniques of the Observer* (1992), where he writes that the observer is not only a person who sees with his eyes, but, more importantly, sees within a set of given possibilities, but is only embedded in a system of stereotypes and constraints (Jonathan Crary, 1992). In short, in modern machine vision, the image is no longer directly associated with intuition, consciousness, or mind, but is equated with the operation of technology, machines, and tools. Since then, non-human vision, visual threshold, and reading merge, and the machine eye gradually detaches itself from any meaning associated with the subject and moves toward a state of impersonality.

In short, the machine image is no longer an extension of the human eye, but a world of unclaimed machine

vision—meaning is lost in technology, which brings this ultimate viewing (Paul Virilio, 1989) to reality. This new approach opens up the process whereby image replaces entity and speed replaces space. Vivian Sobchack has pointed out that camera movement is structurally homologous with the human body: There is a certain embodied relationship between spectator as projector and camera as world, in which machine and human activities of world perception are coupled with one another (Vivian Sobchack, 1992). However, in today's media landscape, more and more impersonal perspectives have appeared, and countless discursive images have constructed the experience of the world for us between our conscious and our unconscious, placing the gaze in a position beyond human reach, with an inhuman point of view or even an autonomous visuality placing the human sensorium outside. In this way, people may sense themselves as being things, while things may sense that they are people. Traditional modes of seeing and feeling are shattered. Any sense of balance is disrupted. Perspectives are twisted and multiplied. New types of visuality arise (Hito Steyerl, 2011).

According to Virilio, from World War I onwards, camera-equipped reconnaissance planes led to a new fusion of engine, eye, and weapon (Paul Virilio, 1991) while Gatling machine guns and other weapons with revolving mechanisms inspired the photographic rifle, which gave rise to the invention of the film camera. The occurrence of mechanized warfare catalyzes a perceptual-technological system of technical and artistic dimensions, and it is in this direction that we can construct an ontological discussion of these visual machines in a contemporary context.

In this paper, the discussion begins with the theory of kino-eye proposed by Dziga Vertov and continues with Hal Foster's robo-eye theory based on Vertov's kino-eye, combined with an examination of Harun Farocki's work. We then move on to the drone as a representative of a new contemporary medium and as a technical object that is in fact an aggregate of various human and nonhuman actions. The evolution of the ontology of machines—from trying to replace the human eye, to ceasing to be relevant to humans, to using humans to support themselves in the midst of their activities. After this, the paper discusses the image production of artificial intelligence to generate art, which, showing the vision of the machine itself, is becoming a visual spectacle representing a new future behind the manipulation of giant capital platforms and closed datasets, as well as the work of a large number of backstage laborers.

2. Kino-Eye

The Soviet film director Dziga Vertov's Kino-eye theory is the most widely-discussed source in the field of machine vision and art, and he is arguably the first creator to begin exploring the overall process of machine image production and dissemination in industrial society, as well as the use of machines as visual subjects to record and observe human activity. In Vertov's practice and conception of the machine image, the visual machine is no longer simply an extension or tool of the human eye, but also constructs a world of impersonal machines itself, which Vertov describes in a series of first-person references in Kino-eye as follows:

I am kino-eye. I am a builder. I have placed you, whom I've created today…I am kino-eye, I create a man more perfect than Adam… I am kino-eye, I am a mechanical eye. I, a machine, show you the world as only I can see it.

Now and forever, I free myself from human immobility, I am in constant motion, I draw near, then away from objects, I crawl under, I climb onto them. I move apace with the muzzle of a galloping horse, I plunge full speed into a crowd… Now I, a camera, filing myself along their resultant, maneuvering in the chaos of movement, recording movement, starting with movements composed of the most complex combinations… (Annette Michelson, 1984)

In his most famous film, *Man with a Movie Camera* (1929), Vertov had already demonstrated his vision of a machine with independent intelligence—an image-making machine that could perform movements impossible to humans, both close to things and above the world. In the film, the viewer is subjected to a frenzy of continuous motion and editing that transcends the logic of the narrative, before a tripod-mounted camera begins to run and move on its own—as if to explain the dubious images that precede it—an automatic Kino-eye that no longer needs to be controlled by human hands.

The Kino-eye is not only a mere recording of reality by a machine, but also points to a state in which the automatic configuration of cinema constructs a constant state of flux—in which mechanical and organic blend with each other (Malcolm Turvey, 2007).

Recalling Vertov's description of the Kino-eye—in which Kino-eye = film viewing (I watch through the camera) + film writing (I write through the camera) + film organization (editing)—this structure implies a deliberate collaborative process and technical network (Annette Michelson, 1984). Reflected in *The Man with a Movie Camera* is the mutual assembly of technical practice and revolutionary aesthetics through the medium of film, as in the various directions of airplane and film camera, vision and metaphor, perception (the eye circling like a propeller) and visual method (flight) (Tomas., Vertov, Snow & Farocki., 2013). The rotation and movement of

the camera is no longer just a mere physical movement, it simultaneously refers to the acceleration of the technological environment and the augmentation of centerless perception. Vision and visual machines not only gain an unprecedented intensity in Vertov's imaging practice, but also construct a preview of the production and transmission system of the image itself, creating the beginning of a highly probable discussion of the ontology of visual machines.

3. Robo-Eye

Born in 1944, Harun Farocki became known for his explicitly political essay films in the second half of the 20th century, before turning to direct cinema. (A method of documentary filmmaking developed in the late 1950s and early 1960s in the US and Canada, in which filmmakers sought to capture their subjects as directly as possible, 2022) Towards the end of the 20th century, he began to pay sustained attention to the images surrounding the processes of capitalist media production, such as images of war, military simulation techniques, and the purpose of entertainment activities, and introduced the far-reaching concept of the operational image to contemporary media studies. The operational image has also been translated by a few translators as the operative image. The German film historian Thomas Elsaesser has evaluated this concept as Farocki's boldest and most lasting contribution to film history and media archaeology. (Thomas Elsaesser & Alexander Alberro, 2014)

As a term similar to the *Instrumental Image* mentioned earlier, the focus of Farocki's operational image falls on the automaticity of the production of image-making machines and algorithms in a capitalist and political context—instead of simply representing things in the world, the machines and their images were starting to do things in the world. In fields from marketing to warfare, human eyes were becoming anachronistic (Trevor Paglen, 2014).

Like Vertov, Farocki is concerned with the systematic workings of machine vision and the perceptual linking of human and machine processes. But because the latter lived and worked during a time (1944–2014) in which technology and media expanded rapidly (Vertov's vision of the Kino-eye has been perfectly realized a long while ago), Farocki's image creation is much closer to that of an archaeologist using a Web image archive for the history of visual machines—a kind of critical thinking based on the image's critical reflection on top of discursivity. (Christa, Blümlinger, 2004)

In the trilogy *Eye/machine I, II, III* (2001/2002/2003), Farocki explores intelligent image processing techniques using found footage collected from laboratories, local archives, and production facilities, mixed heavily with satellite images from the Gulf War, factory product production lines, and normal surveillance images of ordinary streets and workplaces. The first allegorical image of the work is the smart bomb-targeting installation from the first Gulf War. "The targets on the ground look small, and because the bombs in the camera explode while we do not, we feel as if we are directing the destruction: in a technological innovation of a sublime, objective devastation is transformed into a kind of SUBJECTIVE RUSH" (Hal Foster, 2020). Here, seeing is destroying, and the interpretation and forethought previously required of military aerial photography is replaced with immediate action, and seeing something is an immediate erasure of it. The development of wartime visual technology continues to accelerate the temporality within the image, and our viewing becomes part of the war—when we see, we are already destroying (John Armitage, 2001). Flight-viewing is not about disengaging from the battlefield, but rather about engaging in warfare in human absence—exchanging the distance of remote viewing for an objective assault. Thanks to the catalyst of technology, flying visual machines have evolved from hot-air balloons that require human intervention to cruise missiles that automatically track targets, and their vision has evolved from static aerial photography to moving images with the ability to track and recognize. These technological transformations make it necessary to clarify the duality of production and destruction—as repeatedly referred to by Farocki in his work—as well as to consider the network of systems behind the visual machine and what kind of technological logic dominates contemporary visuality as these technologies become more widespread and applied in everyday life.

Farocki's work repeatedly emphasizes the distance between the human and the image, pointing to the impossibility of the existence of a viewing subject, as the automation of technology has excluded the human from the ability to produce and receive visuals. These images mimic the appearance of instrumental images, but further reflection reveals that this is only their second function, almost a courtesy of the machine, because computers do not need images at all (Volker, Pantenburg, 2017). The image no longer exists as a function, but as a pure supply to machines, providing an operational image that is not perceived or grasped by humans, but by another machine. There is no longer any place in this process for the human eye to see, even if what they are doing is highly relevant to humans.

Hal Foster has proposed the theory of the Robo-eye based on Vertov's Kino-eye theory and Farocki's work. The word Robo instead of robotic was chosen because the former implies automaticity and is more in line with the image of the machine with which we are now dealing—it is not like the Kino-eye, which tries to replace humans automatically. Rather than an optical unconscious, (NOTE: As proposed by Benjamin and mentioned in the last

section.) the eye/machine points to a post-subjective seeing, a visual non-conscious (Gilbert Simondon, 1958) Operational images are no longer intermediaries between people and things; they record and store reality, but no longer provide meaning and memories. This is already more than Vertov could have hoped for. Images are produced automatically, and as they are produced, they instantly become elements of the system's operation, each operational image necessarily representing the operation of some algorithmic process and corresponding to the deployment of a technological network. The images we see are both the production and the result, as well as the trace, of the operation.

As Virilio predicts in *War and Cinema*, "the supply of images will be the same as the supply of munitions" (Paul Virilio, 1989). Today's permanently-functioning, omniscient machine vision represents not only a holistic measurement and observation of the world, but also a control (rather than a prediction) of the future, and the impersonality of the image will be developed to the extreme in logistic scheduling and manipulation. Farocki's deeply critical work constantly uses these manipulated images in order to repeatedly reveal the industrial system of power that lies behind them, and also to highlight the cold violence of the images themselves. In the work *Images of the World and the Inscription of War* (1989), for example, he cites an aerial photograph taken by the U.S. Air Force to denounce the Allies' disregard for the existence of Nazi concentration camps. Although the facts were documented on film, differing strategic and intelligence needs led to the neglect of the camp buildings. Under the bird's-eye view of the machine, all living existence will become a thin surface under observation, and for the system, detectability will be the only reference for defining all kinds of things.

4. Flying Eyes

Nothing represents contemporary vision better than drones, which today are not only war machines, but apparently also represent a new kind of media ecology. Increasingly moving into everyday use, these small-winged visual machines are appearing in ceremonies, reality shows, film shoots, and for a variety of other personal or entertainment purposes. Drones are becoming the prime agents within the new attention towards infinite warfare, and are spawning adaptive forms of perception and feedback, simultaneously serving as spectacle-makers, video toys, and filming equipment, as well as war machines, surveillance devices, and hunters. In the drone's many identities and capacities, the properties of perception and technology, image and materiality, embodiment and de-embodiment, are entwined (Beichen Yang, 2021). This complexity, to borrow from Gilbert Simondon's theory, renders the drone not simply a machine, but a technical object with its own unique mode of existence (In the classical cybernetic system, control or present conditions are based on past data, whereas the term post-cybernetic means future-driven, but not with the goal of predicting the future, but with the goal of generating future conditions, 2013), a technological device that cannot be reduced to human intentions or natural processes.

The Taiwanese artist Yuan Guangming's work *Everyday Maneuver* (2018) uses a very minimalistic visual language to bring the drone's vision to the space of everyday life. The entire video is composed entirely of images taken by drones, and through the interplay of the bird's-eye view and air-raid sirens, the work presents daily street scenes from a drone's perspective in a very straightforward manner. The metaphor behind today's fully virtualized and mediated forms of warfare—drones are turning the world into an omnipresent war (Derek Gregory, 2011)—is that we are all scouts and participants on the battlefield. In this invisible battlefield, the enemy is no longer clearly visible or identifiable, but takes place in the future.

Surveillance seems to transcend the barriers of space and time. Images of surveillance are prepared for the future. They suggest the contours of the social imagination under capitalism. According to David Lyon, in the present, ironically, the sense of presence is diluted in the paradoxical non-reality of real time. While the surveillance camera captures certain images at the moment of the event, it is its role in the future that is most important, not the present. Yet this future itself appears in the form of a simulation (David Lyon, 2006).

In such a post-cybernetic (In the classical cybernetic system, control or present conditions are based on past data, whereas the term post-cybernetic means future-driven, but not with the goal of predicting the future, but with the goal of generating future conditions, 2013) context, everyday space is transformed into a field of self-perpetuating crisis, leading to an eternal state of fear (Jonathan Crary, 2014).

In October 2012, the artist James Bridle launched the Dronestagram project to track and broadcast the locations of war drones through Google Earth satellite images; Bridle constantly updated the project on Instagram and other social media platforms. Each satellite image on Dronestagram is accompanied by a description of the situation and the number of casualties at the location. These drone strikes were carried out in villages as well as deserted mountain roads. But Google satellite images are not known to be updated all the time, and the images tracked in Dronestagram may have come from years before the attacks. The time lag between the images and the facts adds a touch of melancholy to the project. Sadly, the project stopped being updated in 2015. Here is the last update from Dronestagram:

(January 26, 2015: The first reported US drone strike of the year killed three people traveling in a vehicle in central-southern Yemen. This is the first attack since Houthi insurgents forced the country's president Abdu Rabbi al Mansour Hadi, his prime minister and cabinet to resign.#drone #drones #yeman)

Figure 1. James Bridle. Screenshot of Dronestagram project, 2021

These images and texts remind us how little we can comprehend what hovers over us, and how clearly the technological and political control of vision—and the correspondingly inherent power imbalance—is apparent. Furthermore, there is no doubt that the images we can grasp will become increasingly blurred in the foreseeable future. As Jordan Crandall puts it, drones offer a view from the disembodied, automated mind of a machine, "as if lurking behind the field of view, from what we can reproduce to construct the reproduction itself" (Jordan Crandall, 2010). The paradox of drone vision and its subject matter, however, is that the images produced by drones are extremely distinguishable from those of other visual machines (i.e., aerials and the bird's-eye view), yet their own images can be blurred, abstract, or even invisible (we apparently follow their flight with the naked eye, if at all, through another drone). In this respect, the appearance of drones has been highly mysterious from the beginning.

The artist and geographer Trevor Paglen has also had a similarly long-standing interest in machine vision and drones, and has sought to do the opposite of what Bridle attempted: Paglen has aimed equipment normally used for astrophotography at the skies above a U.S. Army drone base. Due to the territorial protection of the base, Paglen was only able to shoot from public grounds, 32 kilometers away. As such, in Untitled Predator Drone (2012) and Untitled Reaper Drone (2010), one might only see beautiful yellow or pink clouds at sunset when

looking at the images. Only when looking very closely, while following the title's guide, do we see the two drones hidden in the sky as tiny blurred black dots.

Like Bridle, Paglen's photographic attempts point our eyes towards an unknown, ambiguous zone, and this is might be their strategy—to point to the drone as a combination of power and fear, immortality and death, constructing a highly unequal and violent relationship in the dimension of the politics of life. Power is transformed through technology into a mediated environment in which the subjectivity of the life politics of the observed has been completely stripped away, surviving only in the form of signals, data, and blurred images, a molecule of the figures of death that appear in the news. At the same time, their works point to the fact that the drone, as a technological object, is in fact an aggregation of human and non-human actions that are deployed in a series of mechanized systems. In this post-cybernetic context, drones show precisely this ecological balance between autonomy and non-autonomy, stability and dynamics. It has redistributed the deployment of sensing, analysis, and decision-making, with an operative ontology now emerging (Beichen Yang, 2021).

5. The AI-Eye—Vision of Artificial Intelligence

Through the previous sections, we should have been able to say, without surprise, that people, although they are still the main object of the gaze of machine vision, are clearly no longer the viewing subjects of today. The picture of machine vision is becoming more and more active, and in fact, is becoming invisible and independent from the human eye.

And, of course, machine vision's gaze does not need to be seen by us. A large number of images are now produced by machines for the sake of other machines, with people becoming less and less present in the production and interpretation of them. The image has gradually mutated from an object of the naked eye's observation to a puppet of machinic or digital power. The invisible image and the continued expansion of machine vision are beginning to have a profound impact on human life. In Paglen's opinion, this influence surpasses even the rise of popular culture in the mid-20th century:

Images have begun to intervene in everyday life, their functions changing from representation and mediation, to activations, operations, and enforcement. Invisible images are actively watching us, poking and prodding, guiding our movements, inflicting pain and inducing pleasure. But all of this is hard to see (Trevor Paglen, 2022).

John Houck's work *Portrait Landscape* (2015) turns AI facial recognition on Michelangelo Antonioni's 1996 film *Blow-Up*. Houck uses a software program he wrote to find the faces in the film. Interestingly, facial recognition is often wrong, and the facial recognition system here seems to serve as a Big Brother with obsessive-compulsive disorder, constantly misidentifying a tree shadow or a wisp of clothing as a human face in the film's clip, flickering like a ghost.

Portrait Landscape is made up of multiple images from *Blow-Up*, one of the most famous films in the film history, directed by Michelangelo Antonioni, and links to Antonioni's own quote, "what is beyond an image cannot be known" (Joanna Zylinska, 2020). The reason for choosing *Blow-Up* also relates to the film's story, in which the protagonist is trying to solve a murder case that he unwittingly captured on film; he keeps enlarging the film but is very frustrated to find that nothing can be solved, and the futility of his painstaking search is comparable to the futility of Houck's search for a recognizable face in the film. To the artist, the male protagonist in the film is no different from those autonomous software agents who constantly search for and index images on the Internet; he is like a robot, repeating the process of moving, taking pictures, and searching. In fact, in a sense, these images, they elect themselves.

Houck uses software to narrow down each scene in which a human face is recognized and then returns with editing software to zoom in on those misidentified faces. A strange correspondence emerges between the virtual editing of the camera's movements and the original editing of the film, which was eventually presented as part of the exhibition; here, machine and human catch each other, with nonexistent faces flashing back and forth, creating a truly ghostly performance.

Trevor Paglen, the artist featured in the previous section for his exploration of secret CIA bases, drone warfare, and secret U.S. security agencies, has also focused his research in recent years on the field of computer vision. In a series titled *The Atlas of Invisible Images*, the artist reveals the inside world of surveillance video and computer analysis. A collage of images from the AI Learning Library highlights the space in which the lines between human and computer understanding become increasingly blurred, especially as our reliance on computers as a social force becomes increasingly intertwined with the computers' own material structures and devices.

In another work, Paglen has fed hundreds of Hito Steyerl's images through various facial recognition algorithms, creating a wall of literal expressions grafted together by each program's manipulation of Steyerl's expressions and biometrics. Each image presents a slightly different Steyerl, both in the physical representation and in the web of data spat out by a machine that consumes, computes, and analyzes her face as raw information. Steyerl is

transformed into a puppet-like performance instrument, aided by the framing lines of facial recognition and the wall of words.

Here, I only cite those AI-related artistic practices with clear performative manifestations to support the thesis of this subsection. In the case of this thesis, AI manifests its subjectivity through unpredictable human behavior—and notably, but all too late, AI's performances are becoming increasingly capable of faking a real thing.

The development of generative AI has certainly brought machine consciousness in a more visual fashion to our naked eyes. In 2018, NVIDIA open-sourced the code for StyleGAN on Github, and in February 2019, the Uber software engineer Philip Wang used StyleGAN to create an endless collection of extremely realistic fake portraits, which were made available to the public through the website This Person Does Not Exist. The algorithm behind StyleGAN is based on a large-scale real data set (in this case, the human face dataset comes from the collection of the Flickr website) and then uses a Generative Adversarial Network (GAN) to produce new images. The two neural networks in GAN are placed in an adversarial relationship, one for generation and one for the control and refinement of that generation based on certain criteria. Both share the same model dataset that was fed by hand in advance. GAN can be understood in general logic as a machine that possesses not only vision, but also visual censorship awareness, and the ability to produce a vision.

Some of the pioneering computer-based artists have explored StyleGAN before it was open-sourced to public platforms. Indeed, Memo Atken's ongoing project Learning to see: Hello, World (2017) has been described by the artist as "the first time a deep neural network opened its eyes and tried to understand what it saw" (Memo Akten, 2017).

In Learning to see, the left side of the video shows the artist's actual shot images, while the right side shows the neural network's interpretation of these images. The artwork reflects upon us and how we make sense of the world by showing the visual representation of a neural network. An artificial neural network looks at the world and tries to make sense of what it sees. But it can only see through the filter of what it already knows. Just like we do. Because we, too, see things not as they are, but as we are.

Meanwhile, the German artist Mario Klingemann, considered a pioneer in the use of computer learning in art, is known for his work involving neural networks, codes, and algorithms. Instead of using traditional neural network algorithms to produce images that tend to be realistic, Klingemann developed a technique that he calls Neural Glitch:

Neural Glitch is a technique in which I manipulate fully-trained GANs by randomly altering, deleting or exchanging their trained weights. Due to the complex structure of the neural architectures the glitches introduced this way occur on texture as well as on semantic levels which causes the models to misinterpret the input data in interesting ways, some of which could be interpreted as glimpses of autonomous creativity. (Mario Klingemann, 2018)

In the book *AI Art: Machine Visions and Warped Dreams*, the new media art scholar and artist Joanna Zylinska summarizes this type of generated-image art as a mode of "turning the unconscious generation of images into an art form." (Joanna Zylinska, 2020) Zylinska considers this mode to be premised on banal viewing, where perception is understood as a form of visual consumption, in this way combining generated art with neoliberal economics. She refers to such AI art as platform art: it "produces visual and algorithmic changes within a closed system, while teasing the public with the promise of novelty." The audience becomes a contributor to the platform's dataset simply by watching (mostly unconsciously) or by being seduced into participating. For example, Facebook's Deepmask or Google's Tenserflow can recognize people, places, objects, environments, emotions, gestures, and even users' economic and interpersonal status, in addition to their facial data, status, interpersonal relationships, etc. In short, AI systems have become skilled at using human visual culture and transforming it into a massive, flexible training ground. The images collected by large user platforms such as Facebook and Google are so large that they are becoming more and more accurate. Zylinska quotes Hito Steyerl's argument in Duty Free Art:

These entities are far from mere hallucinations. If they are dreams, these dreams can be interpreted as a condensation or displacement of current technological dispositions. They reveal the networked operations of computational image creation, certain presuppositions of machine vision, its hard-wired ideologies and preferences (Hito Steyerl, 2017).

These presuppositions are evident in many works of generative art, whether it is the generative portraits of the This Person Does Not Exist (Guy Debord, 1967) webpage that feature different skin tones, genders, and ages (but always the same smile), or Klingermann's Neural Glitch, which relies on artificially-enhanced data noise, but if viewed closely, still reveals the relatively recognizable features of a white young woman. Similar are the infinite non-existent portrait medals generated by the author's personal project, Endless Glory, which relies on

StyleGAN and a dataset of portrait medals from Google Images to generate new portrait medals, which gradually turn into a similar white male face as the project progresses.

Meanwhile, Paglen's project It Began as a Military Experiment (2017) partially sheds light on what lies behind these generated portraits. For this project, Paglen explored the FERET database, which contains thousands of close-up photos of faces (most of which belong to workers at a military base in Maryland). These photos were collected at the request of the military for the development of facial recognition technology, and almost all subsequent facial recognition research has been conducted using those images.

These portraits, which were not intended for human eyes, were subsequently manipulated by Paglen and presented in the context of an art exhibition. These visual consciousnesses, which are not designed for the human eye, become very performative when the artist captures the trajectory of their consciousness. Jon McKenzie provides a starting point in his general theory of performance in a post-disciplinary society by distinguishing between cultural, organizational, and technical performances (Chris Ingraham & Allison Rowland, 2016). Cultural performances, including those broadly associated with the name of art, strive for the validity of their symbolic acts, often with an eye toward social change (Jon McKenzie, 2001). At the same time, organizational performances strive for efficiency in the same way that employees and companies work to get their jobs done better. Finally, technological performances include the way in which technology works. From cars to computers to rockets, the challenge of these performances is effectiveness—i.e. the optimization of technological functions such as speed, precision, balance, temperature, and so on. McKenzie draws on Deleuze and Guattari to refer to this phenomenon as machinic performances. Machinic performance involves multiple agents and sites—human and non-human, virtual and real. In McKenzie's important argument that performance has become a major hierarchical form of power and knowledge since the late 20th century, he cites the NASA Challenger disaster to emphasize the indivisibility of cultural, organizational, and technological performance (Jon McKenzie, 2001). Mechanical performance is the name given to the decentralized assemblage that embodies the entangled nature of cultural, organizational, and technological performance genres.

6. Conclusion

The main focus of this dissertation is on the phenomenon of non-human vision in the contemporary, machine vision-dominated, post-surveillance context. This non-human phenomenon is manifested first and foremost in a technological environment where today's Internet archives consist not only of information systems, but of the individuals who strive to manipulate them. People must use the language of the system when they enter the system; context and meaning are no longer important. Secondly, in the Internet media context, human subjectivity is weakening, As Stiegler's industrialization of memory—by way of the technical prostheses, which present an unloved, mediated past as an event rather than a lived experience. The result is a precarious claim to memory as a result of the ability of such technologies to subsume individual and cultural memory, engendering an industrialized exteriorization of knowledge that fundamentally transforms knowledge of the self into commodifiable and documentable events. (Bernard Stiegler, 2009)

In this composite reality, there is a great divide between personal experience and its representation in various media. The divide leads us to a visual spectacle of self-images, which Guy Debord considers to be alienated visual representations, stylized presentations of the self, an appeal to the relationship between the subject and the mode of production (Guy Debord, 1967) This is the Anthropocene landscape happening now in the Internet archive, an industrialized mechanism of operation in which the subjectivity serves the mode of production.

At last, I would like to end this dissertation by borrowing Zylinska's words:

"We need to open up the human sensorium to other forms of intelligence and perception, to recognise our entanglement with creatures and machines, to look around, askew. This opening needs to involve our recognition of the human capacity for telling stories, having visions and dreaming dreams." (Joanna Zylinska, 2020)

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