

**Uninhabited territories:
eye-machine, operative images and geopolitical conflicts in the works of
Agencia de Borde and Femke Herregraven**

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This article aims to analyze how the drone - in its prosthetic, machine and automated dimension - and the operative images that emerge from the recording of certain sites intervened with war and extractivist motives generate ecomedial and techno-imaginary ecologies of seemingly uninhabited territories. The above is developed from the analysis of two audiovisual projects: *The Landmine Project* (2016-2020) by the Chilean collective Agencia de Borde and *Prelude To: When The Dust Unsettles* by Dutch artist and designer Femke Herregraven (2022). The former explores minefields laid between 1973 and 1983 in the Atacama Desert in Chile, while the latter shows the modus operandi of a digital twin for mining in the Congo. These are seemingly untouchable territories, out of circulation, where, given their imagined future - either as explosive or exploited territory - a drone and its digital eye appear to be the only way to visually access these places, which are presented as inadmissible and uninhabited. Both cases expose geopolitical conflicts that are primarily articulated and mediated through the production and manipulation of images and technical intervention. In this way, the development of the text proposes to think about forms of contemporary violence that take shape through specific visual devices and rhetorics.

Keywords: territory, drones, operative image, landscape

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Introduction

The hypothesis of this research is that the process of recording territories, through specific devices that operate from the air —such as drones and satellites—, leads to the structuring of what I propose as a landscape-weapon. Thus, I define landscape-weapon¹ as *a technical, warlike, capital and visual construct that provokes the overflow of the concept of landscape from the unavoidable link it maintains with structures of contemporary violence*. With this in mind, I would like to position the present article as a dialogue in development that seeks to think about and stress the relationship between territory, operative images and eye-machine -fundamental concepts in the proposed problematic- through the analysis of audiovisual material generated by contemporary creative practices that narrate diverse geopolitical tensions. Two cases are presented and described below for introductory purposes:

¹ The idea of the *landscape-weapon* is inscribed in the framework of my current doctoral project, where it is proposed as a concept that seeks to highlight the status of landscape (as a representation of territory) in relation to its relationship with contemporary forms of violence and the development of certain devices of visibility. I propose that the *landscape-weapon* appears in the triad of violence-order-surveillance. That is, there is a strategy that operates in the territory (at the aesthetic, symbolic, and political levels) and there is a visual regime that registers it, especially the eye-machine. The concept of the weapon is approached mainly from the ideas developed by Wolfgang Sofsky, German sociologist, writer and journalist, in *Traktat über die Gewalt* (1996). For Sofsky, weapons are the backbone of violent mechanisms. Assuming that the mortality of the body is the imperfection that mobilizes the logic of violence, this corporeal vulnerability generates the need to create weapons and devices of greater range, whose aim is to extend brute force where the human body cannot reach. In this sense, weapons are not only artifacts, but also the manipulation of time and space, as well as territorial representations and landscape. The *landscape-weapon* would thus adapt to the development of action and the organization of violence.

Overtured by the war-technical intervention in the Atacama Desert is a minefield.

In *The Landmine Project*² (Campos minados, 2016) by the Chilean collective Agencia de Borde, the unauthorized border crossing of Huaytiquina is explored where anti-tank and anti-personnel mines, 5 x 8-centimeter artifacts planted during a decade (1973- 1983) by the Chilean Army, configure a minefield of approximately 42 kilometers. A small object distributed in masse, 182,000 mines, flood a vast area, transforming its original geological condition. A drone travels through the territory vetoed by the technical intervention. Safe and controlled, it registers the uncertain area that cannot be trodden in view of the imminent explosive danger.

A digital twin that speculates on the future to break through the ground.

In *Prelude To: When The Dust Unsettles*³ (2022), Femke Herregraven evidences the link between advanced visualization systems and mineral extraction through the creation of a “digital twin” of a large lithium deposit in Manono, Democratic Republic of Congo. A digital twin is a rendered model of a real-world mine in which virtual mining operations are simulated to detect and optimize stock efficiency and future profits. Stripped of side effects such as contaminated ecosystems, exploited bodies, endangered species, toxic air, geological faults, traumatized communities and violated landscapes, the digital twin operates as an uninhabited 3D model that can be traversed by a disembodied and immune eye.

Both audiovisual projects described above give food for thought from different perspectives. However, there are aspects that I would like to problematize specifically. Where the body cannot access, the prosthetic and machinic eye of the drone -both omnipresent and speculative- presents itself as the only resource of visibility and access. There too, where images create the illusion of an uninhabited territory (by silencing its occupation), diverse geopolitical tensions resonate. Both in the desert minefields and in Manono's digital twin, it is evident how technologies of visibility in their ubiquitous presence can generate ecomedial ecologies (Cometa, 2023) and techno-imaginaries that invisibilize structures of capital and colonial violence rooted in the places.

² Agencia de Borde. *The Landmine Project*. See in: <https://www.thelandmineproject.com/>

³ Femke Herregraven. *Prelude To: When The Dust Unsettles*. See in: <https://www.place.dev/player/index.php?key=tzJMmUKbrY>

In this sense, several questions arise: in what way do images impact on the territories? are images a passive agent of registration? under what rhetoric of operability, both device and image, can they make invisible? And, by the way the projects described, how can creative practices generate critical counter-narratives that question the use of images? This article aims to problematize the idea of uninhabited territory from the analysis of the use of operative images produced by drones in the works described above. The reading axes will be focused on thinking how the creation and constant development of new technological devices of visibility, particularly those that produce images from a prosthetic eye, make evident how human activities increasingly drive to a systematic distributed violence that overflows the margins of the representation of places and territories.

In order to develop the above, the proposed critical apparatus is structured in four moments. First, a brief conceptual horizon on territory is proposed, understanding the latter as a discursive device that brings together political, economic, strategic, warlike, legal forces, among others, that are activated and enter into conflict depending on the sociohistorical margins in relation to the delimitation of land or terrain (Elden, 2013; Montero, 2023). In the second instance, the drone will be situated as a robotic device, primarily epistemic (Denicolai, 2022), which impacts the optical field by enhancing human vision as an automated prosthetic and machinic biotechnological organism (Arcagni, 2018; Cavallotti 2022; Emmelhainz, 2015). The drone as a heterogeneous assemblage based on the superposition of its potential functions is the articulation of the *medium* par excellence for the extraction and datification of the world remotely (Chamayou, 2006). The drone is also inscribed in the rhetoric of those visual devices, not only in terms of the models of representation that they imply, «sino como emplazamiento de saber y poder que operan directamente sobre el cuerpo del individuo»⁴. In this context, the drone, in a totalization of perspectives or synoptic visions covering the whole space and altering time, establishes itself as an expanded field: the data it captures and the way of seeing it develops and configures provokes a revolution from the sighting. For Nathan Hensley and Roger Stahl signify, in addition, a regime of figuration, a way of seeing, therefore, a modality of thought (Hensley, 2016).

⁴ J. Crary, *Techniques of the observer: On vision and modernity in the nineteenth century* (1992), tr. sp. di Lopez Garcia. F, Cendeac, Murcia 2008.

Thirdly, images will be analyzed from their operational dimension, that is, practices and infrastructures of images whose purpose is not representational but rather to detect, calculate, measure, analyze, navigate, identify or even destroy (Parikka, 2023). Due to its digital character, its performativity unfolds in visual and invisual fields, generating a dense mass of data organized in layers of information. All these characteristics structure a methodology that addresses their operational character as ontogenetic forces that produce material realities. They are therefore instrumental images for the dynamics of power and capital⁵. To the extent that these images regulate, guide and reconfigure, they manage to impact bodies and territories as they contribute in war, extraction and financing logics (Mezzadra, S., & Neilson, 2019). As a fourth and final part, the analysis of *The Landmine Project* and *Prelude To: When The Dust Unsettles* will be developed problematizing the previous concepts. This will emphasize how the configuration and use of drones and their production of images operate as a function of a political rhetoric which generates an imaginary of unoccupation, thus allowing the instrumentalization and colonization of spaces.

To conclude this introductory instance, I would like to propose the following question: how do these tensions in the territory affect, stress, overflow or even exhaust the concept of landscape as a representational device⁶? Currently, the creation and constant development of new technological⁷ and visual devices⁸, the overwhelming and overflowing presence of technology, the changes in the contemporary social fabric due to the collapse of the modern narrative matrix⁹, together with the new perception we have of the planet/world in the context

⁵ J. Parikka, *Operational Images: From the Visual to the Invisual*, University of Minnesota Press, Minnesota 2023, p. 36.

⁶ Although this article does not focus on the conceptualization and tradition of landscape, it is important to emphasize that it is inscribed within contemporary concerns about the emergence of ideas and concepts that come to question it. Force-ideas such as extractivism, extinction events, climate crisis, Anthropocene, the irruption of Gaia, among others, arrive to stress its aesthetic universe as a means of representation that presents the relationship between human beings and territory, as proposed by Jens Andermann in *Entranced Earth: Art, Extractivism, and the End of Landscape* (2023). In this sense, it seems to me that elaborating the concept of territory, as a field in dispute, in its geopolitical and representational dimension, takes on particular force to think and rethink the horizon of meaning of the landscape in the face of the need to assemble the human and the non-human in contexts where violence overflows.

⁷ Along with digitalization and as Alain Roger points out, «the invasion of the audiovisual, the acceleration of speeds, the spatial and abyssal conquests have taught us and forced us to live in new landscapes, subway, underwater, aerial, sonorous, olfactory, moving away from the archaic story of the old Europe». See in: Roger, Alain, *Court traité du paysage* (1997), transl. sp. by Veuthey, (ed. by) Maderuelo, J, Biblioteca Nueva, Madrid 2013.

⁸ H. Steyerl, *The wretched of the Screen* (2012), transl. sp. by Berardi, F, Caja Negra, Buenos Aires 2014.

⁹ S. Rojas, *El Arte Agotado*, Sangría Editora, Santiago de Chile 2012.

of the Anthropocene and climate change, reveal how human activities increasingly drive to a systematic ecological and socially distributed violence that overflows the margins of the representation of places¹⁰. Moreover, it seems as if we are facing an imperative where the world is configured from the becoming landscape. The means of visibility are so prolific and totalizing —enclosing us in the time of the large scale synchronized with technology, globalization and capital— that the question arises if there is a representational omnipresence. Territories are loaded with meaning. The world is loaded with landscape, the world itself is an image. In this regard, how do we think the landscape? How do we represent from the landscape this condition and relationship with the world?

Brief annotations about the territory

As stated at the beginning, this article is developed under the assumption that technologies of visibility can generate ecomedial¹¹ (Cometa, 2023) and techno-imaginary ecologies that invisibilize structures of violence rooted in places. In the proposed case, these technologies generate, on the one hand, a discursivity of uninhabited territories when they manage to omit human and non-human occupation from their registers and, on the other hand, they leave in evidence the structures of violence rooted in the places, thus stressing the concept of landscape as a representation device.

¹⁰ The point in question about the landscape configuration is precisely, following Sergio Rojas' ideas, the crisis of the subject (as configurator) and the humanist coefficient of its articulation. Therefore, we can speculate that the concept of landscape is overflowed because the reading key strongly rooted in the human-object relationship as a measure of the world has collapsed, proper to the appearance of an overwhelming consciousness of entities that question the measure of man. See in: S. Rojas, *El Arte Agotado*, Sangría Editora, Santiago de Chile 2012.

¹¹ With ecomediality, Michael Cometa proposes to expand the field of investigation of media ecology in order to stop reducing the problem to studies of hardware and technical and/or cybernetic devices. For, as he states, what we commonly call media are only one component of a much more complex environment, of a *nicchia ecomediale* that comprises precisely bodies, gazes, forms of perception. The idea of *nicchia ecomediale* elaborated by the author allows us to understand the media as devices in a sense more closely linked to the positions of Foucault and Giorgio Agamben. That is to say, to understand them «come sistemi complessi che comprendono il *vivente* e il *non vivente*, materie e discorsi, l'ideale e il materiale, le innovazioni tecniche e la *zoe*. Insomma come nicchie ecomediali». In this context, the concept of ecology is key. It allows us to broaden the field of biology, which, as Cometa states is «importante sia come metafore sia come modello concreto per l'evoluzione dei media- all'ambiente, perchè i media vanno compresi in un sistema di relazioni che include l'intero ecosistema del pianeta. Non solo, quindi, la materia, ma anche la *materialità* degli elementi, organici e non-organici che li costituiscono. Si tratta insomma di applicare una visione compiutamente bioculturale, basata cioè sull'idea di una coevoluzione tra *zoe*, *bíos* e *téchne*, di innesti – sempre più evidenti dell'era del post-umano tecnologico – tra il biota e il resto del pianeta che è fatto di materia inerte, macchine, costruzioni culturali (linguistiche e gestuali), rituali, performance e via discorrendo». See in: M. Cometa, *La Svolta Ecomediale: La Mediazione Come Forma Di Vita*, Meltemi, Milano 2023, pp. 12-13.

As a starting point, situating the concept of territory is key. As the English geographer Stuart Elden points out in *The birth of territory* (2013), this is far beyond being a simple delimited place, «the territory should be understood as a political technology, or perhaps better as a bundle of political technologies»¹². That is, the territory is a device generated between various discursive forces and the interaction between them. Political, economic, strategic, warlike, legal forces, among others, are tensioned depending on the socio-historical margins in relation to the delimitation of land or terrain (as property). As Michel Foucault points out: «territory is undoubtedly a geographical notion, but it is above all a juridical-political notion: the area controlled by a certain type of power»¹³. On the other hand, and apropos of the same, for Chilean researcher, visual artist and photographer María Rosario Montero, it is fundamental to highlight the link that the concept of territory maintains with violence. She writes:

Por su parte, desde el ámbito de la geografía legal, David Delaney define el territorio como tierra ocupada por la violencia, como lugares donde las limitaciones y las fronteras son negociadas o impuestas por/ una comunidad determinada. Elden también reflexiona en la violencia que implica la delimitación del espacio, como un acto de exclusión e inclusión, donde aquello que se delimita distingue una pertenencia de un adentro y un afuera, al mismo tiempo que compone espacios que necesitan ser reforzados y mantenidos, requiriéndose un esfuerzo constante para establecerlos y mantenerlos [...] El territorio es, por tanto, la tierra poseída, distribuida, mapeada, calculada, delimitada, disputada y controlada. En este reconocimiento de la dimensión simbólica del territorio, confirmamos que su valor va más allá de ser un objeto económico: ha sido concebido como un modo de organización social/espacial, de carácter histórico, geográficamente limitado y dependiente de la cultura que lo administra¹⁴.

We can say, then, that the territory is a politically active and performative device (affective and experiential), which mutates and is permanently under tension. Based on the ideas of Félix Guattari and establishing a dialogue with the Brazilian geographer Rogerio Haesbaert,

¹² S. Elden, *The Birth of Territory*, The University of Chicago Press, Chicago 2013, p. 322.

¹³ M. Foucault, *Questions à Michel Foucault sur la géographie*, in “Dits et écrits”, 1954–1988, vol. 3, (éd. par) D. Defert and F. Ewald, Gallimard, Paris 1994, 32; and M. Foucault, *Questions on Geography*, (trad. par) C. Gordon, in “Space, Knowledge and Power”, (ed. par) J. Crampton, S. Elden, Ashgate, Aldershot, UK 2007, p. 176.

¹⁴ R.M. Montero, *Una Línea Marca El Horizonte: Fotografía Contemporánea Del Paisaje En Chile*, Ediciones Metales Pesados, Santiago, Chile 2022, p. 51.

Pablo Mansilla Quiñones points out that the current phase of modernity (late capitalist, colonial and patriarchal) promotes constant processes of deterritorialization and reterritorialization. This articulates a global dis-order that transgresses the way in which territories are produced and inhabited. In this way, environments and zones in crisis are incubated, where disputes over power over diverse terrains, nature and its resources are at the center of contemporary geopolitical conflicts¹⁵.

In this context, the representation and production of images, particularly those of zenithal vision¹⁶, play a fundamental role. Various devices and apparatuses have sought to give visibility to territories and their respective changes. From cartographic language — as Lorenza Pignatti explains in *Cartografie Radicali* (2023) —, through painting, panoramas, photography, to more contemporary forms such as Google Maps/Earth, the gradual improvement of satellite images and remote sensing, surveillance and monitoring technologies such as drones and security cameras, forms of territorial records are configured articulating specific relations of knowledge-power in relation to land and its occupation. In this way, the relationship between land and power -its limits and boundaries, its openings and closings-, and eventually diverse forms of violence materialized in space, are mediated by devices of visibility and imagery.

The eye that floats, the eye that registers, the machine eye

I propose to think of the drone as a complex robotic device, underlining its epistemic agency, which impacts the optical field by enhancing human vision as a prosthetic and automated biotechnological organism. We will call drone a remotely controlled eye-machine that, independent of its degree, under Gilbert Simondon's logic of individuation and complexity of registration, operates under the logic of zenithal vision and telecommand. In this section and in relation to the above, it is important to develop the relationship of this device with the visualization of spaces and territories.

First, we must situate such a device in relation to the technical-visual. As Irmgard Emmelhainz states, the development of devices in the optical field offers an improvement of

¹⁵ P. Mansilla Quiñones, *Geography of Absences, Coloniality of the Being and the Territory as a Critical Substantive in the South Epistemologies*, in “Utopía Y Praxis Latinoamericana” 24, n.º 86, pp. 148-161.

¹⁶ M. Gutiérrez De Angelis, *De Kepler a Google Street View: La perspectiva cenital como dispositivo de la visión*, in “E-imagen Revista 2.0”, Nº5, Sans Soleil Ediciones, España-Argentina 2018.

human vision through prostheses¹⁷. For the author, this inaugurated three crucial processes in perception. First, the machine introduces the gradual standardization of viewing in augmented reality. Second, this prosthetic enhancement of the human eye generates the illusion of "limitlessness" and the unregulated gluttony that desires to see everything from nothing, spreading the principle that everything can be seen, constantly kicking the edge of the invisible. Third, machinic vision becomes an epistemological issue from a human-centered point of view, but without stable points of reference¹⁸. Under this conceptual horizon and starting from the ideas developed by Lorenzo Denicolai in his essay *Il robotmedium come dispositivo relazionale: tecnologia e visione* I propose to situate the drone as a specifically robotic device. Denicolai, in an interesting proposal, states that a robot is a medium capable of substituting and empowering humans in certain actions and situations (at the same time articulated as a media and shamanic-technical machine). In this sense, the robot is a device that allows us to establish relationships with others and to experience the world in which we are inscribed. He points out:

In questo caso, il robot fornirebbe lo strumento e le necessarie regolazioni per vedere e per mostrate (un dispositivo di visione e/o di rivelazione?), aprendo così alle possibilità di esplorazione dell'ambiente: conseguentemente, dunque, sembra configurarsi anche come un'estensione percettiva e cognitiva, come uno dei molti "media that performatively intervene in our action" [...] Il robot si inserisce bene in questo ambiente complesso e stratificato, in un panorama relazionale che apre a dei potenziali approfondimenti. Da un lato, infatti, è evidenti che il robot costituisce una delle molte possibilità che l'automazione e la datificazione – intesa sia come la produzione e l'estrazione di dati, sia come l'elaborazione e la trasformazione di questi ultimi in oggetti percepibili, visibili e, perché no, vivibili- offrono oggi all'agente umano¹⁹.

In this sense, the author emphasizes the immediate relationship between man and medium (facilitated by the robot). A hypermediatic relationship, of reciprocal and communicative naturalization, which strengthens the link between the digital and analog worlds at different levels. On the other hand, based on the ideas of Ruggero Eugeni, who proposes three

¹⁷ It even creates confusion between itself and the device (which is configured as an extension).

¹⁸ I. Emmelhainz, *Conditions of Visuality under the Anthropocene and Images of the Anthropocene to Come*, in "Journal #63", 2015, <https://www.e-flux.com/journal/63/60882/conditions-of-visibility-under-the-anthropocene-and-images-of-the-anthropocene-to-come/>.

¹⁹ L. Denicolai, *Robotmedium: Dispositivi, Intelligenze, Cinema*, Meltemi, Milano 2022, pp. 25-26.

typologies of devices: technological, situational and epistemic²⁰, Denicolai distinguishes between types of robots that are part of our daily life according to these categories. As technological devices or *apparecchio* refers to prostheses with a high degree of automatism that function without our apparent participation, but participate in our daily experiences²¹. On the other hand, a situational device or *assamblage* refers to robots that interact with humans with a relatively low level of AI, generating immediate communication (they can be either digital thermometers or medical machines that interact with patients). Finally, there is the epistemic device or *apparatus*, which the author explains:

Si tratta in sostanza, di un oggetto vivificato che, per riprendere la rilettura antropologica di Severi, assume su di sé delle identità complesse, “derivanti dal costituirsi di relazioni rituali e non soltanto al semplice trasferimento di un aspetto del pensiero umano sul mondo degli oggetti” [...] Il robot (che prende il posto dell’ indefinito oggetto di cui parla Severi) non è solo un feticcio, ma piuttosto un *assemblage* di eterogeneità – perlomeno di sue identità, la nostra e quella dell’ oggetto stesso – che dialetticamente si co-modellano nel rispecchiamento che la sua stessa materialità corporea garantisce. In questo senso, è possibile accennare rapidamente a un’ ulteriore lettura. Per Kirk Besmer, l’ uomo può riflettersi nell’ agente robotico avviando un processo di embodiment, sottolineando come il “sense of being “in” or “inhabiting” the remote body of the robot” si traduca in un “robotic re-embodiment”²².

In this way, the epistemic dimension of the robot points to those devices that allow us to know the world to the extent that the human and the environment enter into a relationship of mutual modification for the generation of new knowledge.

At this point, I would like to add a fundamental aspect of the device we propose as robotic: the machinic gaze. The drone is not only a device that moves and flies, but also records and registers. The device is first and foremost a hovering camera that can capture different visual data depending on the complexity of its operation. As Denicolai points out about this aspect

²⁰ Eugeni says: «Parlerò in seguito (riordinando i termini lessicali del dibattito) di un dispositivo epistemologico (l’ apparato, più generale e astratto, cui assegno il nome inglese di apparatus), di un dispositivo situazionale (il dispositivo che eroga e guida l’ esperienza di uno o più soggetti, che nominerò con il termine di dispositivo) e di un dispositivo tecnologico (l’ apparecchio o gli apparecchi specifici: quello che si può chiamare il device/appliance)» See in: R. Eugeni, *Che cosa sarà un dispositivo. Archeologia e prospettive di uno strumento per pensare i media*, in R. Eugeni, G. Avezzi, (ed.), *Il dispositivo*, La Scuola Editrice, Brescia 2017, pp. 5- 43 [<http://hdl.handle.net/10807/110986>]

²¹ *Ivi*, p. 35.

²² *Ivi*, pp. 44-45.

— regarding machine vision integrated in robots —: «intanto, la visione meccanica, ossia la capacità del medium robotico di potenziare e di estendere la vista umana, abilitandola a vedere dei fenomeni altrimenti non coglibili a occhio nudo»²³. In other words, the robotic device with built-in machine vision has an extended state of visibility that would emphasize even more an assembly resulting from a mutual embodiment between the human and the device itself. It is also important to emphasize that the result of this connection, i.e. the creation of images, occurs as an act of material translation, in which the visual information collected by the machine must be transformed into a perceptible fact for the human being. Artificial vision is a gaze that the machine shares with the human. In this way, a way of translating a mechanical perception is configured that becomes meaningful for human reception and cognition²⁴.

Taking all of the above into account, within this universe the drone moves between the three stages of robotic devices described above, depending on the complexity of the technical device itself, whether simple or complex. That is, it is a technical device insofar as it is a diverse technological object that adapts its corporeality to objectives and automation — a drone for war, a drone for show/tourism, or a drone for home recording are not the same thing — it is a situational device insofar as it interacts with humans as a function of telecommand; and finally, it is above all an epistemic device. This is because the drone is incorporated into human perception, not only as a resource that provides specific images, as an alien object, but as a way of seeing, thinking, and relating to space and time, as an object of visual expansion with which the body is embodied.

At this point, it is important to emphasize the relationship between drones and the mapping of territories, especially in terms of their epistemic condition. Drones, as remotely controlled vehicles, represent space vertically from coverage and mapping. In *Théorie du drone* (2013), Grégoire Chamayou outlines seven principles for understanding such a revolution of the gaze. First, the drone articulates a constant geospatial gaze, the mechanical eye that observes has no eyelids. Secondly, this gaze produces a totalization of perspectives (the field of vision extends over large areas), i.e. it is possible to see everything, all the time. The large number of images produced by these devices generates, as a third principle, a total archive, the storage

²³ *Ibid.*

²⁴ *Ivi*, pp. 38-39.

of which makes it possible to reconstruct genealogies and itineraries (this storage capacity overflows the existing one). Fourthly, the data and archives produced can be merged to create blocks of information that contain the potential to build informational layers of the same event, unifying the present, the past and the future from anywhere. Finally, principles five, six and seven unfold in the logic of surveillance and monitoring: schematization of life forms, behavioral analysis and detection of anomalies with a preventive purpose²⁵.

In this context, the images generated by drones, as strategies of representation based on digital apparatuses and assuming a specific topography, a certain way of thinking and organizing time and space²⁶, have detonated a series of changes in the aesthetic, symbolic and political dimensions on and from visibility. It alters any sense of scale, radicalizes and transcends the human scale, and produces a return to the fiction of the Eye of God. «El ojo de Dios abarca con su mirada dominante la totalidad del mundo (...) Nada le es opaco porque es eterno, abarca todo el tiempo, pasado presente y futuro. Su saber, en fin, es más que un saber. A la omnisciencia le corresponde la omnipotencia»²⁷. Diachronic and totalizing, the form of the drone is based on massive asymmetries of perspective²⁸.

The resulting georeferenced database poses more than one problem. Sovereignty, for example, is no longer flat, slavishly territorial, but volumetric and three-dimensional²⁹. As Chamayou points out, the drone eliminates the reciprocity of the scene of the crime and transforms vision — and with it the risk of death — into a unilateral operation. In this sense, the images produced by drones in contexts of surveillance and monitoring represent a certain exercise of biopolitical power. That is, forms of producing sovereignty and espionage from the domain of 3D, or what architect and researcher Eyal Weizman calls the politics of verticality. As he explains in *Introduction to the Politics of Verticality* (2002), before, geopolitical control used to be distributed on a flat surface (like a map, where borders were defined and drawn two-dimensionally). Today, the distribution of power has taken on a

²⁵ G. Chamayou, *Théorie du drone* (2013), tr. sp. di L. Eiff, Ned ediciones, Barcelona 2016.

²⁶ *Ivi*, p. 28.

²⁷ *Ivi*, p. 46.

²⁸ N. K. Hensley, *Drone Form: Word and Image at the End of Empire*, in “Journal #72”, 2016, <https://www.e-flux.com/journal/72/60482/drone-form-word-and-image-at-the-end-of-empire/>.

²⁹ G. Chamayou, *Théorie du drone* (2013), cit., p. 58.

vertical dimension³⁰, dividing space (subsoil, land, and airspace) into stacked horizontal layers³¹.

In this context then, from above, explains Hito Steryel quoting the Cameroonian philosopher Achille Mbembe:

La ocupación del suelo adquiere, por tanto, una importancia primordial en la medida en que la mayor parte de las acciones policiales tienen lugar desde el aire. Con este fin se movilizan tecnologías variadas: detectores a bordo de vehículos aéreos no tripulados, jets de reconocimiento aéreo, aviones con “ojo de halcón”, helicóptero de asalto, satélites de observación, técnicas de hologramas³².

Therefore, images coming from devices such as the drone are reshaping cartography, international relations and global representation strongly intertwined with digital capitalism: sovereign territories of the world also gaining digital visual domains, navigable and privatized in the hands of large corporations³³. The drone, in principle, is the story of an eye turned into a weapon. High resolution flying cameras armed with missiles and detailed images of the territories of conflict zones³⁴. It is for this reason that the rapid proliferation in the technical development of drones has meant an equally rapid proliferation of new ways of seeing and conceiving hegemony, as well as new ways of exposing political violence. As Roger Stahl explains, drawing on the ideas of Paul Virilio: «the history of war is a history of visual technologies and, in many respects, the gun and the camera share a common lineage; alongside the war machine there has always been a machine of ocular observation»³⁵.

³⁰ Eyal Weizman cites Israel's occupation of Palestine as an example. This began as a set of ideas, policies, projects and regulations proposed by technocrats, generals, archeologists, planners and road engineers of the Israeli state since the occupation of the West Bank, dividing the territory into different discontinuous layers generating control from high points.

³¹ H. Steyerl, *The Wretched of the Screen* (2012).

³² *Ibid.*

³³ L. Parks, C. Kaplan, *Life in the Age of Drone Warfare*, Duke University Press, Durham, NC 2017.

³⁴ G. Chamayou, *Théorie du drone* (2013), cit.

³⁵ R. Stahl, *What the Drone Saw: The Cultural Optics of the Unmanned War*, in “Australian Journal of International Affairs 67”, no. 5, 2013, pp. 659-674 doi: 10.1080/10357718.2013.817526.

Operative images and the production of uninhabited imaginaries

Now, the images produced by visibility devices such as drones are framed in a specific ecomediality, above all, and particularly in terms of their digital quality. That is to say, a digital object³⁶ that becomes data, pixel, measurement, automation, rendering, speculation and projection. These activities are framed within the logics of operativity. As Jussi Parikka points out in *Operational images: From the visual to the Invisual* (2022), «operational images trouble what an image is, as far as it shifts from representational to nonrepresentational, from the primacy of human perception of bodies, movement, and things to measurement, pattern analysis, navigation, and more. They change the scales and terms of reference»³⁷. In this sense, operativity, according to Parikka in dialogue with Sandro Mezzadra and Brett Neilson -in relation to contemporary capitalism-, is a term that is linked to logistical infrastructures and all kinds of actions that function to sustain, mobilize, analyze and synthesize all those "data" that become "images". A coupling of perception and action that control, regulate and amplify the functioning of bodies. In this sense, operative images only exist thanks to other operations and, moreover, operations that help us to understand the transformation of images into data, from the visual to other forms and formats of registering the world beyond representation³⁸. Operative images, then, are not so much interesting as images in themselves, but as part of a broader infrastructure of skills, labor, techniques and technologies and, above all, of how institutions assemble such images according to their particular needs and uses impacting our daily lives and our affections. Parikka explains:

It can be seen as a term that speaks to techniques of measurement, analysis, and synthesis through techniques of images but in particular institutional situations and uses. Operational images organize the world, but they also organize our sense and skills in terms of how we are trained to approach such images, from the photogrammetric mapping of landscapes to pattern recognition, astronomy datasets to Mars Rover imaging practices. On the other hand, the term relates to practices (and labor) of testing, administering, and planning also reflected in the sites of filming. These range from schools to offices to management training centers, and army field exercises, to paraphrase Elsaesser³⁹.

³⁶ It is suggested to follow Yuk Hui's ideas in *What is a digital object?*. See in: Y. Hui. *WHAT IS A DIGITAL OBJECT?*, in "Metaphilosophy 43", no. 4, 2012.

³⁷ J. Parikka, *Operational Images: From the Visual to the Invisual*, cit., p. 36.

³⁸ *Ivi*, p. 11.

³⁹ *Ivi*, p. 38.

It is important to highlight the explicit political scope of the author's proposal. Parikka does not propose these images as mere institutional instruments for their social use, but rather situates them as forces of attraction that direct in various ways the spheres of power, vision, perception, subjectivity, information, data and access to them. In this way, operative images introduce frictions related to their hegemonic institutional functional use and to all those dynamics of capitalist force/violence that pass as every day and harmless operations. In this aspect, images in their operativity are understood as ontogenetic forces that produce reality, that is to say, they produce material realities that become suitable instruments for the dynamics of power.

Based on the proposal of this essay, it is appropriate to focus the discussion on the operative images of the territories. That is, images that measure, divide, describe, speculate, project and extract. This theme is also developed by Jussi Parikka in a broad and critical way, focusing on the discursive chains between images and geopolitical interventions. He develops this by underlining in particular the idea that territory today refers not only to the earth, but to any planetary surface framed by observation technologies, from satellites to sensors⁴⁰. We can see here that the constant development of visual devices and their images kick and reconfigure the boundary of what we know as territory. To the extent that the devices visualize new zones to be discovered and inhabited (both terrestrial and non-terrestrial, human and non-human), they enter the confines and logics of geopolitics. That is to say, they enter the logic of knowledge-power through the administration of the earth:

Forms of techniques (that are other than military targeting or the even broader aerial view and photography) are central in understanding the operative ontologies at play: images materialize at specific sites and spatial–logistical formations, and they are operative in specific institutional practices (military, finance, extraction industries, scientific remote sensing, landscape surveys, architecture, and planning, to name some)⁴¹.

How do these images impact on the territories? Let us follow Parikka's proposal in dialogue with Mezzadra and Neilson, who propose three main operations to develop their theory of capitalism: extraction, logistics and financing. Parikka thinks about the impact of operative

⁴⁰ *Ivi*, p. 41.

⁴¹ *Ivi*, p. 55.

images in connection with the territory in its direct relationship with colonial, capital and war activities, bearing in mind the three operations mentioned above. Parikka refers to images that operate in particular narratives: visualization of battlefields, espionage in conflict zones, measurement and remote sensing of territories for agricultural or mining activities, data extraction and rendering of models with Artificial Intelligence, among others. This last factor particularly stands out, since the potential operational image allows a speculative and projective dimension. The operative image has the power to configure models, i.e., to extract data to later articulate them in a provisional way and generate a set of trained actions that can create alternative models to the real one. In this sense, operative images detect patterns of analysis that potentially produce anything as an image.

But the question of the model becomes a site of investigation of the change of images, as it becomes a site of investigation of data and knowledge, which is why it warrants placement alongside the discussions of platforms and datasets. Model, as such, also becomes an epistemic device to investigate the operations of images and operations of formatting the world in their own invisual image. Such models are not visualizations of the world but operational interfaces through which changes are enacted, whether in the contexts of urban planning, military operations, or earth observation of land use and land cover, vegetation, agricultural crops, erosion, and so on⁴².

It seems that the idea of the measured territory is the basis for transforming the image into data, the data into a model, and the models into infinite images of possible futures. A mechanism that makes it possible to visualize different strategies for formatting environments. Predictions of territories, predictions of the future. This aspect, however, does not particularly surprise us, since it is a common contemporary operation, present in architectural and design projects, as well as in other economic activities related to the exploration and exploitation of land, sea or space, or even in strategic projects of military invasion, among others. The problem of articulating such models arises when they are part of a dynamic that seeks to make structures of violence invisible. That is, the problem that Parikka demonstrates is that in these models, in relation to the rhetoric of capital and power, configures a projection of raw land and not of its actual occupation or habitation. Each

⁴² *Ivi*, p. 91.

projection is made without taking into account possible vulnerable human and non-human factors, thus hiding the secondary effects that certain actions can have on different agents.

In this context of the production and use of operative images, it is important to emphasize the critical role that contemporary creative practices maintain when they use these same images to articulate discourses of residence and to make visible the various problems of violence that are rooted and invisible in the territories. In this way, the critical use of operative images can put in tension the hegemonic use of the rhetoric of capital, production and operativity.

The Landmine Project and Prelude To: When the Dust Unsettle

Creative practices, especially those that configure audiovisual material through digital tools, seek to generate strategies of creation, action and circulation from a transdisciplinary perspective, producing diverse experiences of materialization around a narrative engine. In the analysis proposed below of *The Landmine Project* by Agencia de Borde and *Prelude To: When The Dust Unsettle*, forms of representation of the territory are examined mainly through the articulation of images recorded by drones. Both projects also expose, through the alternative montage of operative images, various fractures that testify to the historical and symbolic tensions present in conflict zones. That is, contexts in which violence materializes in places and is registered through machinic gazes. In this way, the material analyzed responds to the desire to generate critical counter-narratives from the alternative use of images.

One. Femke Herregraven developed *Prelude To: When The Dust Unsettles* as a member of the international artist collective On-Trade-Off⁴³, founded in 2018 in response to the "discovery" of a lithium deposit in a mining area in the Democratic Republic of Congo, specifically in the village of Manono. The work is a video installation with a topographical model and a sound composition with recordings of the site.

While this territory was declared a key piece in the promise of green energy, it was transformed, at the same time, into a zone of financial speculation and future mining

⁴³ Current members: Alexis Destoop, Marjolijn Dijkman, Pélagic Gbaguidi, Femke Herregraven, Jean Katambayi Mukendi, Musasa, Alain Nsenga, Georges Senga, Pamela Tulizo, Maarten Vanden Eynde.

exploitation⁴⁴. Currently, and due to the use of available visualization technologies, large international mining companies generate complex digital models of territories in order to speculate and make simulations of megaprojects. Sophisticated digital tools of remote sensing, computational modeling and machine learning are used to generate what is known as a digital twin. Renderings that are used to simulate extraction processes and convince politicians and investors of their potential profits and benefits. In this sense, the computationally articulated data and pixels create a hyper-clear and ideal model, stripping it of all "noise" produced by the daily use of the site. All the side effects of mining activity such as physical impact, pollution, waste and toxicity in the area, social and physical exploitation of workers and the local population, is omitted from this computational representation.

The images used to create the model are captured by a drone equipped with specific remote sensing and multispectral technologies to accurately define the characteristics of the surface where the mineral deposits are located. Geological exploration in hard-to-reach places is the ideal scenario for a remote-controlled machine eye. The technological corporeality of the mobile eye makes it possible to rescue images by gaining access where the human body cannot. At the same time, its embodied eye registration simulates a one-to-one exploration. In other words, it is able to visualize as a human eye would visualize (without the spectral details, of course) with an ethereal freedom of mobility. In this way, the drone glides through the air, climbs to the study area, penetrates through cracks, explores the interior of the earth whose future is to be exploited.

In this way, the artist articulates these operative images of the digital twin by adding her own images and sound recordings to articulate a narrative that seeks to expose all that the operative images erase. The sound of one's own work, characteristic of the mines, reminds us not only that human bodies work in confinement and darkness, but also that where the image appears to be silent, the earth is removed, the soil mutates, and the landscape is interfered with.

⁴⁴ "Prelude to: When the Dust Unsettles • Femke Herregraven," Femke Herregraven, accessed May 6, 2024, <http://femkeherregraven.net/prelude-to-when-the-dust-unsettles/>.



Figure 1. Femke Herregraven. *Prelude To: When The Dust Unsettles*. Video installation with topographical model, and sound composition with recordings from Manono. Video capture. 2022.

Thus, Herregraven brings together these split realities by combining the virtual with elements of Manono's reality in a rich audiovisual material. In the face of possible lithium extraction, the artist investigates, explores and problematizes how these digital twins create a purely virtual history that helps maintain the economic ideology of extraction and global projectivity. As the title of the project refers to, the artist states that «the work is a prelude to an alternative digital twin of Manono that develops as a collective project and goes against the abstraction and monetization of the landscape and its inhabitants»⁴⁵.

Two. Between 2016 and 2020, Agencia de Borde (from now on AB) developed the project *Campos Minados*⁴⁶, an interdisciplinary proposal that crosses new media, visual and sound, from the reflection on the position of landscape in the fields of contemporary representation, problematizing the aesthetic, symbolic and political dimension of territories burdened by technical interventions. Within these research margins, *Una explosión sorda y grave, no muy lejos* (2017) is born. The project is based on the exploration of minefields planted by the

⁴⁵ *Ibid.*

⁴⁶ Agencia de Borde. The Landmine Project. <https://www.thelandmineproject.com/>.

Chilean army in the Atacama Desert between 1973 and 1983⁴⁷. During those ten years, approximately 181,000 anti-personnel mines were planted in the border areas. This military intervention transformed the territory into an untouchable place, out of circulation, creating borders through a series of artifacts that determine the impossibility of inhabiting it. The military action generated a landscape as a technology in itself, creating borders that devour everything.



Figure 2. Agencia de Borde. *Una explosión sorda y grave, no muy lejos*. Drone registration. MAC, Valdivia. Chile. 2017.

This situation of uncertainty, that of a landscape turned into a weapon whose spatial-temporal state has been modified, is taken up by AB as a challenge. Currently, the number of mines present is uncertain and their location is a mystery. The changes in the geographical conditions of the territory, characteristic of the dynamism of the Atacama, have moved the anti-personnel mines from their original location. Seismic movements, wind and summer rains have caused the explosive condition of the place to constantly mutate, turning this desert into an unstable, rebellious and performative landscape. The danger remains invisible to the eye, undetectable. In this sense, technology — and human intervention for military purposes — plays a key role in mediating our experience of the landscape. Subway mines, objects no larger than 58x8 cm, are capable of changing the way we perceive and relate to the land, playing an omnipresent role⁴⁸. In this sense, they are objects that interrupt the continuity of

⁴⁷ The minefields were laid in the midst of the political crisis, which threatened to go directly to war, with Argentina over the Beagle Channel and the persistent tension with Peru and Bolivia. Since then, their presence has been justified in order to regulate the entry of foreigners and illegal traffic of any kind.

⁴⁸ M. R. Montero, S. Melo, P. Salas, *The Landmine Project: How to Cross a Fractured Territory*, in “International Journal of Culture and History”, no. 4, 2018, pp. 84–87,

the territory. A unit that multiplies, takes and modifies the landscape, overflows it and transforms it into a weapon.

Una explosión sorda y grave, no muy lejos materializes in an installation that shows the ways of accessing and observing these minefields. The recording of the mechanical eye (the drone), the archive (as an apparatus of historical mediation) and the audio material recording the sound of the explosions are mounted in the exhibition space so that the viewer travels through and encounters the mined desert through different perceptual stimuli.

In AB's proposal, using the war language of verticality and 3D political sovereignty, the registration of the drone suggests the withdrawal of the body, placing it out of reach through the possibility of a prosthetic eye that explores places the body cannot access, keeping it safe. The drone eliminates the reciprocity of the scene of the crime and transforms vision, and with it the risk of death, into a unilateral operation: I see you, but you do not see me, and if you do see, it is the drone, not my body.

As can be seen in both works, the presence of the drone and the operative images it produces are a fundamental part of the articulation of the proposed counter-narratives. Both projects articulate, configure and assemble the images and other elements to expose geopolitical tensions: particularly extractivist and warlike ones. By proposing another logic of interpretation, the projects evidence the critical dimension of territorial violence that is often invisibilized and silenced in the production of capitalist and colonial imaginaries. In both works, sound is incorporated as an agent that completes and challenges the silence present in the images. The sound in *Prelude To: When The Dust Unsettles* and *Landmine Project*- summons all those presences (human and non-human) denied in the records. Sound breaks with the illusion of uninhabited territories as a factor that resonates and resists invisibilization. In this way, the works propose a turn to ecomedia and to the institutional and hegemonic techno-imaginary of drones and operative images. A technical object loaded with uses in structures of violence and images that provide data to contribute to the logics of capital production, are reused to narrate resistance.

Conclusions

In the words that open the interesting collection of essays *A Short Incomplete of History of Technologies That Scale* (2023), Nóra Ó Murchú talks about the concept of scale, based on

the challenges posed by current devices of visibility to access new scenarios of measurement. Although the concept of scale is not explicitly addressed in the article, it is clearly part of the exposed problem, raising the tension of the protagonism of devices and images as part of the rhetoric of measuring the world. «These kings of measurement hold histories, speak to geographical contexts, and can be synthesized from data at the touch of a screen. Moving or scaling through the contexts and information alters feelings, alters our socio-political condition, and challenges us to continually reorganize our world»⁴⁹. Both devices and images are political, cultural, social and technical. They fabricate and circulate realities, move between/with us, and transform what we see through infrastructures and logistics that rearrange not only the visual and the materially tangible, but also the relationships, affects, and beliefs that are deeply rooted in images and their production.

When we think about ecomedia and the techno-imaginaries of specific devices, we have to bring together a multitude of factors. We need to think about images, political infrastructures, contextual surveillance systems, networks, operational and circulation systems, among others. In other words, we need to think broadly about the technical and non-technical, visible and invisible conditions that, once set in motion, operate on the material fabric of the world. As proposed in the article, the manipulation and action on the territories through operative devices and images respond to a series of discursive factors inherent to such a technical-visual universe. In other words, the *modus operandi* of the drone and its images are part of a specific universe of how to see, measure, explore, interact, reproduce and intervene in the world. The proposed problem focuses on how these technologies, used in extractive operations and war-military strategies, manage to invisibilize and silence the secondary effects in those places intervened by contemporary forms of violence and colonial strategies.

Finally, the article proposed to think about how violence takes shape in different realities, where the visibility of territories becomes a fundamental problem, in order to think about the challenges of contemporary fields of representation from more complex and dynamic perspectives. As Harum Farocki suggests, «elevar el propio pensamiento hasta el nivel del enojo, elevar el propio enojo hasta el nivel de una obra. Tejer esta obra que consiste en

⁴⁹ N. Murchú, J. Fakin Janša, *A Short Incomplete History of Technologies That Scale*, Aksioma, Ljubljana 2023, p. 7.

cuestionar la tecnología, la historia y la ley. Para que nos permita abrir los ojos a la violencia del mundo que aparece inscrita en las imágenes»⁵⁰. The unequal political and representative space on which contemporary (and remote) violence depends is mediated through the production of images. In this context, it is urgent to think about productions of resistance that suggest other forms of knowing how to think about images.

⁵⁰ H. Farocki, *Desconfiar de las imágenes*, transl. sp. by J. Giser and A. Marchi, Caja Negra, Buenos Aires 2013, p. 35.