

Recalibrating Vision in the Rainforest

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Abstract

This article describes how the technologies of illusion in a stereoscopic audiovisual apparatus are utilised to problematise the limits of perception, and how our relationship with the invisible and the non-human may be re-negotiated through technological devices. The work articulates a reflection about the “ways of knowing” as the political dimension in the native forest and its relationship with the Huilliche people. The article problematises the dominant western episteme that separates the human from the non-human, which in turn is an ideological need for justifying the increasing ecological devastation. Hence, the epistemological becomes a political problem by assuming that it determines not only the ways in which we understand the world but also what defines our relationship with the environment.

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Alejandra Pérez Nuñez and Pablo Mollenhauer – Recalibrating Vision in the Rainforest (video still)

Walking ecosystems

The starting point of this text, pictures and stereoscopic video was a walk amid the Mapu Lahual territory between Condor Bay and Maicolpué during the southern hemisphere summer of 2018. People have walked through the vegetal strata of the thick Valdivian rainforest that compose this territory of the South of Chile for thousands of years. The journey from the interior lands towards the Pacific coast to collect seafood is a traditional practice of the Huilliche people. Despite the Spanish arrival in 1552, their conquest of the territory in 1792, and the posterior establishment of the Chilean government, vast parts of the Mapu Lahual territory have not been occupied or have been left behind capitalist endeavours. The main reason for this was that the territory was independent and hostile to the Spanish crown from 1604 until 1792. After the Spaniard recovered the southern territory there was celebrated a peace treaty that granted the coastal territory to the Huilliche's jurisdiction. Mapu Lahual became managed by the Huilliche people. After the Chilean independence, most of the coastal land were bought or usurped from the Huilliche people. However, the Mapu Lahual territory was left almost untouched due to its topographical characteristics which make difficult the exploration and extraction of natural resources, and the dense forest has prevented the clearing

of land to be used for agricultural purposes. Hence, the Mapu Lahual territory conserves a pre-colonised character. This status is apparently secured by the management of Huilliche's communities, and that until now, most of the territory lacks roads for motor vehicles. Instead, the area is connected by muddy paths amid the dense forest of the Costa mountains, which makes the trip through the land possible only by foot or by the rivers and the sea.

Mapu Lahual is a particular ecology. Understanding ecology as coexistence that defines the mutual need between entities (Morton 2007), Mapu Lahual is a site of unique significance because of the persistent yet fragile balance of coexistence between the endemic forest and the native people that has endured relatively unaltered by the process of colonization and economic take over of the land. The management of the Huilliche people and their own forms of economic activities have been a permeable firewall in which the rhythms of both the millenarian forest and the capitalist activity are constantly negotiated.

Huilliche people have walked through the territory for thousand of years to collect seafood from the interior to the coast, to transport cattle, and grab wood for making the weapons which fought the Spaniards and then the Chilean Government during 500 years. It seemed to us, as researchers and artists, that the territory demanded to be walked in order to be experienced from a decolonised subjectivity. Following Tim Ingold, the mind emerges within the environment in a co-production of knowledge and space (Ingold 2000). As we move in the world, this influences our bodies. The decisions and directions we take during the journey are not exclusive to our mind. Rather, the environment creates our world together with us in the process of moving through and knowing it (Turnbull 2007). Juanita Sundberg identifies walking as a decolonising practice because it produces a world along with a multiplicity of beings (Sundberg 2013), it is a form of coexistence outside from the ones offered by modern methods of moving through. Walking is a process in which knowledge is built along with the entities that produce the place that is walked; so it is an important practice as a way to build an understanding of the world from a plurality of meanings (Mignolo 2018). We use walking as a method to know along with the non-human. If there is an increasing need for adopting a decolonized position of coexistence in order to understand along with the world, then to calm down and stroll might be a starting point. In this way, walking becomes a form of encountering local histories (Sundberg 2013), a way of being part of those stories that define the specific coexistences of the place. This practice serves to overcome the increasingly anaesthetised senses in the world. To walk becomes an activity for changing perceptions regarding time in opposition to the speed and productive form of knowing promoted by capitalist systems. Walking becomes a form of being part of human and non-human histories, to move through area-specific practices and interactions, and to imagine the world in congruity to what is now hidden from us.

The Valdivian forest

The Valdivian temperate rainforest of Chile is dominated by broad-leaf evergreen flowering trees that evolved separately from the temperate forests of the northern hemisphere. It is a complex biological structure composed of species that are unique to the region. As with other isolated systems, the region derives much of its ecological significance from a unique and varied plant and animal habitat.

The co-evolutionary and co-operative ecological relationship established by the people who had been living in the area for thousands of years was broken during the Spanish conquest and colonial period, and the creation of the state of Chile. Great expanses of land dominated by trees and understory plants were burned

to convert them into agricultural land. Thousands of Alerzales, a forest of Alerce trees (*Fitzroya cupressoides*), a tall, long-lived conifer native to the Andes mountains of southern Chile and Argentina, that had specimens of some living for thousands of years, were logged and exported to the rest of the colony, or used as currency in the region. By the 1970s, the loss of trees in the forest had been extensive, and pressure over the use of the land occupied by the forest continued to be even more intense. The violence inflicted upon the Valdivian forest during the Spaniard colonial period, and then the independent new nation of Chile was accelerated under the dictatorship of Augusto Pinochet during the 1980s. The establishment of a voracious political-economic system installed in which the capitalist system was liberated of state constraints that may slowdown the production and exploitation of natural resources.

The sustained rapid expansion of the Chilean economy since the 1980s, with an average rate of growth in Gross Domestic Production of 5.5 per cent from 1990–2007 (Banco Central de Chile 2009) has been a constant threat for the survival of the Valdivian forest. Unfortunately, there are now new threats that go beyond the local situation such as the global climate change. New actors have appeared, such as the mining industry, which has become increasingly interested in exploiting some areas of the forest. Meanwhile, illegal logging of Alerce trees continues.

Amid these rapid changes, previously unknown agencies of the forest such as viruses, have emerged disturbing economic activities, creating invisible barriers, and ultimately preventing the complete takeover of the forest by human activity. The main characteristic of these agencies is that, until recently, they were previously unknown or unidentified, and that they are still not completely understood. Insofar as these agencies become conspicuous to humans, there is an increasing revelation of our incapacity to understand using our senses and traditional tools of measurement and control. The existence of a virus in the forest is experienced as an epistemological gap that separates the world from us. The problem resembles the Kantian philosophical problem of the sublime, of what is not possible to know because it exceeds our capacity to represent it.

The sublime in the Critique of Judgment

Immanuel Kant's *Critique of Judgement*, written in 1790, develops key notions of transcendental philosophy. In the third volume of the *Critiques*, Immanuel Kant reflects upon the relationship between nature and freedom. It is as if he is trying to re-establish the unity lost by the "division inflicted by the first two Critiques" (Lyotard 1994: 1). For Kant, our cognitive capacity has two domains: one relative to the concept of nature, and another, concerned with the concept of freedom (Ibid.:13). The cognitive power "legislates a priori" through these two concepts (Kant & Walker 2008: lxxxviii). In addition, the capacity of judgment is "a teleology of nature for freedom" (Lyotard 1994: 2), which resolves the gap between nature and cognition, in an activity that subsumes the first into the realm of subjective experience. According to Kant, nature is there for men to know it.

The central concept in the philosophy of taste is a type of aesthetic judgment of the "nature's subjective purposiveness (*Zweckmäßigkeit*)" (Kant & Walker 2008: xxiv), which reveals the possibility to establish "a priori judgments" (Ibid.). "The idea of the supersensible as required to solve the antinomy of taste is the idea of the supersensible as underlying nature's purposiveness for our judgment (Kant & Walker 2008: lxiv)". The pleasure that results from the sublime is an awareness of a subjective purposiveness that presupposes the recognition of a contrapurposive subjectivity (Ibid.: lxix). In other words, given that there is an

insurmountable distance between the world and the cognition of the world, a supersensible faculty emerges from the failure to access the world. The recognition of this failure to comprehend is the source of the supersensible since it restores purposiveness, as the human discovers himself as to be independent and different from nature. Man, using the male centred subjectivity of Kant's time, is able to recognise that he is different from nature, thus giving him the possibility of freedom.

When the senses present things outside me, the quality of the space in which the things are intuited is merely subjective [feature] of my presentation of them (and because of this [feature] I cannot tell what such things may be as objects in themselves), and because of this subjective reference the object is moreover thought as merely appearance (Kant & Walker 2008: 29).

Our senses are completely separated from the objects of nature, and thus the supersensible is not in contact with the appearances. Consequently, the concept of nature "under the legislation of understanding" and the concept of freedom "under the legislation of reason" do not exert any influence on each other (Ibid.: 35-36). "The understanding, inasmuch as it can give laws to nature *a priori*, proves that we cognize nature only as appearance, and at the same time points to a supersensible substrate of nature; but it leaves this substrate wholly undetermined (Kant & Walker 2008: 37)". We may as well ask whether the substrate to which Kant refers as undetermined might belong to the more-than-human and therefore a different form of knowing, which is not entirely impossible to access, if only indirectly. The supersensible substrate of nature may be considered as a non-human realm to which a human has no access.

Manifestation of Absent Ecologies

The Hantavirus has been known in the West since 3,200 cases of associated haemorrhage and fever occurred in the early 1950s among the troops of the United Nations who participated in the Korean War. The main agent was discovered in 1976 and was denominated Hanta based in the name of the river Hantaan, where the rodent hosts of the virus were captured. In the Americas, the human infection of Hantavirus was unknown until 1993, when a series of mysterious deaths by sudden lung disease among the indigenous population occurred in the Four Corners region of the United States. An epidemiological investigation identified the aetiology of the illness. This resulted in the discovery of an unknown species of Hantavirus, which was named "Virus Sin Nombre" translated as "Virus with no name" (SNV), and the illness a 52% death rate was named as Hantavirus pulmonary syndrome (HPS). In South America, specifically in Argentina and on the other side of the Andes, in Chile the virus has been confirmed since 1994. For this reason, the main agent has been named "Andes Virus". However, there had been confirmations of contagions since 1975, that previously presented the same symptom as the "Andes virus" but that were prescribed having unidentified causes. More recently this has led to the conclusion that this kind of Hantavirus is endemic. As time goes by, more and more cases have appeared and the variation in the amount of cases depends on the season and the time of year.

The presence of the virus in the Andean vegetation and in the Valdivian forest of southern Chile is due to the fact that the Andes Virus, like all Hantavirus in general, is associated with a specific animal that inhabits this environment. In this case with, namely, the rodent family Muridae, and specifically, in the case of the Andes Virus, with "Ratón colilarga" (*Oligoryzomys longicaudatus*). This species of rodent, that hide under bushes in rural zones and forests, have a long co-evolutive and co-specialised process with the virus. This

specific coexistence makes it difficult for the virus to adapt to different hosts, like humans for instance. In terms of transmission, the main difference of Hantavirus from other viruses is that the agents are not transmitted through visible disease vectors such as those of mosquitoes, but rather, the virus is spread through the air when the excreta of a contaminated rodent such as saliva, urine and stool is disturbed. Hence, humans become accidental hosts of the virus caused by the inhalation of the invisible aerosol that contains the virus strain.

This characteristic of transmission through the traces left by the rodents, which spread to the air when they are intentionally or unintentionally stirred, converts the Hantavirus into an invisible menace, constituting a specific feature of the Valdivian template forest in particular – the presence of the invisible. It is the haunting of absence, the latent danger that can be found anywhere at any time amid natural environments. The perturbing character that is part of the natural environment drives the access or lack of access, the body's capacity to know or to unknow the world.

This phenomenon has been increasingly problematic since the Spanish arrival, the German colonization of the zone, and the modernization encouraged by the Chilean state, since the amount of land gained to the forest by means of logging and fire have contributed considerably to the expansion of the "Quila" in the territory. The "Quila" is a bamboo of the "Chusquea" genre that is common in the Valdivian rainforest. It spreads in parts in which the forest has been disturbed by human action. These formations are named the "Quilares". The main characteristic of this species is the phenomenon of flowering and then synchronic death that is believed happens in cycles of 30 or 40 years (McClure 1966). The phenomenon has been recorded in written sources from the Spanish colonial times since the phenomenon is always accompanied by famines in the human population. The reason for this is that the seeds coming from the flowering provide a vast amount of food for granivorous rodents, whose population grows explosively reaching the number of many millions. When the seeds of the Quila run out, the rodents devastate human settlements, destroying harvests, domestic goods, clothes and even eating human flesh. These phenomena are known as "ratadas".

The incidence of cases of the Hantavirus have increased over time, particularly in years of the flowering and seeding of the shrub Quila, that provides abundant food for the colilarga rodent. This can be seen as consequence of the colonial imposition of a form of coexistence, which not only has disturbed the ecosystem, but also has created new relationships and configurations that are characterised by explosions of life and death.

Holes (walking through the forest)

The forest is marked with holes: on the forest floor, on rotten trees, spider holes, Camaron holes (*Parastacus pugnax* ombre) and mouse holes. We don't know how to distinguish them, they all look the same as if they were looking at us, as if the holes belonged exclusively to the "colilargo". The forest produces a presence to start with, it contains different environments marked by luminosity keys, humidity and aromas. In addition to this, the Hantavirus also has a presence, it is made from what is not there to us, what is not perceptible is experienced as ambiguity emanating from the holes. At times, what was not there, as a visible presence, was the most present of all the entities in the forest, including us. The holes were only the entry points to the unknown. They elicited the phantasm and the speculation. All the actions had the potential of contact: collecting firewood and water from the stream, cleaning the ground to camp, getting lost and camping amid the forest in a non-safe area. This absent presence modified our perception, the forest took the shapes of

our imagination and our perception was modified by topographic incidents.

Stereography

In the context of the audiovisual medium, the use of elements of stereographic reproduction of moving images and photography presents a renovated material form of accessing the world. The stereoscopic device does not produce an equivalent between the synthesised image and the object of interest because its effect is not “likeness”. Rather, it provides immediacy, that is, an apparently pure visual tangibility (Crary 1988: 28). This palpability is no longer relevant to the medium itself or the trace of the absent object on it, but rather similarly to the absent presence of the virus, it is manifested as an influence. Actually, the stereoscopic system does not function separately from our vision, but as contiguous instruments in the same plane of operation (Ibid.). The eyes and technical system are joined together by the visual link produced by the stereoscopic illusion. Once this link is formed, the tool has the capacity to subject the observer, to take her towards the limits of visual coherence.

The stereoscopic system can make us perceive spatial incoherences, to make our senses uncomfortable, to attune our mind through the vision in such a way that a gap is revealed. A sensorial and epistemological limit emerges. The use of stereoscopy in this project points at this limit to denote the absent presence of the virus. The links that join the profilmic space, the system of reproduction, and the perception of the observer have the capability to produce an imperceptible materiality of impossible and multiple perspectives. Particularly, this occurs when the system is calibrated to a physiology that is different from the human, which as a result, stages a limit in the form of an error. In other words, the human constraints defined by our own body proportions are demystified. These material restrictions leave aside many other layers of knowledge, that we could call the un-knowledge, and which contains what we are not capable to know but we are able to not know.

The human organism has the capacity under most conditions to synthesise retinal disparity, that is the different images projected for each eye, into a single image. The parallax, or the degree to which the angle of the axis of each eye differed when focused on the same point, (Ibid.: 25) is what determined the three-dimensionality of the image synthesised. If the parallax of both eyes is parallel, like in the case when we watch an open landscape or the horizon line, there is no three-dimensional effect. However, when the objects are closer, the parallax of each ocular globe increasingly differ, producing a synthesised image of an intense three-dimensionality. In the thick forest, all entities are at close distance, there is a surplus of volume. This closeness becomes a problem in the creation of the stereoscopic illusion since a minimum distance is needed between the objects and the cameras. The stereoscopic system constantly crosses the limit of coherence. The “vividness” of the object as it appears closer is broken when the threshold is crossed, becoming a “strangeness”. As we get closer to the subject of interest, the illusion that makes the world coherent to our senses is broken, hence the space of the profilmic becomes anomalous. The forest also influences the coherency of the stereoscopic effect.

The closeness of the entities of the forest, and the stereoscopic system itself render errors: impossible parallaxes that prevented the synthesis of a volumetric image; vertical misalignments forcing the eyes to compensate the differences hence producing discomfort; rotational errors that caused the corners of the image to pop up; retinal rivalry when a form appears only in one of the images, which prevents the mind to reconcile the images to produce the three-dimensional image; and colour and bright differences between

the images that change the perception of each image. As a result, the spatial coherency of the image did not always coincide with the space recorded; certain patches appeared forward when they should have appeared backwards. These “errors” opened a leeway to experiment with differences between the two images that form the three-dimensional image, such as freezing one of the images while the other continues in movement, to displace back and forth in time the convergent point between the images, and to change the focal length of one of the images.

The dismantlement of truth

Jacques Rancière (2007, p. 109) notes that the art of the sublime is sustained under the premise that there is an impossibility to represent the essential character of what cannot be brought before our eyes. The question that the presence of the absent conveys is whether there is any form of access to the invisible, to the latent that only manifests itself when it has overtaken the body, as in infection of the human bodies or the places they inhabit. This problem of access and contact with processes and entities of the world through our senses is enclosed in the cases of the flowering of the Quila and the Colilargo mouse in the Valdivian forest of southern Chile. For Jacques Rancière, in *The Future of the Image* (Ibid.), the new art of the sublime came under the patronage of Burke and Kant and is characterised by its revocation of representation, since, for this type of art, some things would not have the capacity to be represented. The object in the sublime is not able to establish any “harmonious relationship between presence and absence between material and intelligible” (Rancière 2007: 111) and thus does not acquire any mode of representation. Art’s limitations to represent the unrepresentable is described as a “surplus of presence” and a “correlate of unreality” (Rancière 2007: 110).

As the presence of the invisible in the forest, the stereoscopic system provides the immediacy for the presence of the absent. The presence of the absence does not leave us indifferent, but rather its actual power is higher than if it were visible. As such, it influences the form in which we sense the world, taking over our senses and creating an externality that makes us see differently. Yet, this is not a new form of an image that induces us to see things differently, but a material modification that changes the way we see, and that is not necessarily aligned with the way our body functions. The synthetic character that cannot be fully effaced may produce nausea and headaches as when a human hosts a virus. Hence, the stereoscopic image is no longer a representational replacement of the world, but rather is a hallucinatory composite of two dissimilar images whose positions refer to the anatomical structure of the observer’s body rather than the definition of perspective (Ibid.:31). This is precisely the materiality attained in the stereoscopic system, a force that realigns, that recalibrates our vision, and hence operates from within the production of our mind as the potential encounter with the virus does. The recalibration is produced within a multidimensional encounter between entities and their constitutive worlds.

The visual sensorial recalibration also addresses the politics of the aesthetics of the production of images in a different form than has been previously done. While experimental cinema has looked at the material as a form of demystified apparatus to reveal the illusory force of the cinematic apparatus itself (Gidal 1978; Le Grice 2001), the critique has remained in the apparatus as such, with the exception of some scattered artworks that focused on the vision as subject of the film, such as in Flicker films (Conrad 1966). These theoretical and practical works have focused on the critique of the cinematographic illusion from a Marxist perspective (Le Grice 2001). Yet, in the times where it becomes evident that the world has been shaped in function to some human bodies (i.g. WASP (White, Anglo-Saxon and Protestant)) in order to satisfy the

desires created by the capitalist system, the critique of the illusory capacity of the moving image system is no longer enough. The systems that create illusion fit to our bodies; they are shaped taken in account the human sensorial constraints that determined the ways in which we see, we interact and know the world. Hence, the stereoscopic system does not only provide the possibility to demystify the audiovisual apparatus but to question the vision itself. For this purpose, the contiguity of the stereographic system with the vision facilitates the revelation of the limits of our body in the process of knowledge acquisition, that points out to our incapacity to access the world from a different epistemology.

In the *Aesthetic Unconscious*, Jacques Rancière (2009) reframes the imperceptible, which is considered not as the phenomenologically non-acquisitive but rather as the insignificant, what is not there because it is not fit for reality. For Rancière this approach is a “testimony of a particular relation between thought and non-thought” (Ibid.: 3). Insignificant phenomena might be encountered in the act of walking, watching and recording the stereoscopic image of the Valdivian forest such as dust accumulation, noises, holes in the forest, detritus and potential virus.

The Hantavirus is the model for the imperceptible which becomes part of the perceptible as strangeness and when it has taken over the human body as in infection. The potential of contamination anywhere and anytime within the forest unveils an epistemological limit that induces sensorial errors. The stereoscopic system does not render a representation of the Hantavirus but the system’s immediacy induces errors as an equivalent of the virus infection. This anomaly perceived in the field of vision is not produced only by the intrinsic features of the stereoscopic system, but also by the constraints in the production and reproduction of the stereoscopic images. The enclosed space of the forest that does not provide the minimum distance to produce coherent stereoscopic results, the cheap cameras that despite being the same model present differences in their fabrication, the tiredness produced by walking through the mountain, the many methods of reproduction: anaglyphs, cross-eyed, parallel view; all these factors are present and prone to produce errors. The stereoscopic image, like the Hantavirus, is perceived as an anomaly experienced in its absence but that nonetheless is present. This presence is induced by the whole: forest, virus, technical apparatus, particularities of the human vision. For all these reasons the stereoscopic image is infected. In turn, the three-dimensional picture influences the mind through the visual sense rendering spatial incoherences, presenting errors that reveal a very human limit.

The error in the stereoscopic image may be considered as more-than-human vision to which a human has no access. In other words, as humans participate in the production of the world, there are experiences beyond their sensorial constituency. These experiences are lived as anomaly and strangeness. In this sense, the limitations of human perception are sensed as the anomaly in the stereoscopic rendering of the Valdivian forest. Along with it the idea that the world is inaccessible is questioned because what we encounter is the absent presence of the anomaly. Instead of restricting access to the imperceptible, the stereoscopic system lets us participate in the notion of perceptual diversity in a way similar to the processes of infection. The mind is taken over by the perceptual trick, taken over by the non-human in the form of the technical agencies and the Valdivian forest, both meshed together in the production of the stereographic image.

Video Links:

Video 1: *Recalibrating Vision in the Rainforest*: <https://youtu.be/W0tAV4BED9M>

Video 2: *Recalibrating Vision in the Rainforest*: <https://youtu.be/XWcZ4dw5SQ8>

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