A Peer-Reviewed Journal About

RESEARCH NETWORKS

Sudipto Basu
Wenhao Bi
Nicola Bozzi
Iuliia Glushneva
Rebecca Holt
Özgün Eylül İşcen
Linda Kronman
Wing Ki Lee
Juan Pablo Pacheco
Cristina Ribas
Giseli Vasconcellos
Tatiana Wells

Christian Ulrik Andersen
& Geoff Cox (Eds.)

Volume 9, Issue 1, 2020
ISSN 2245-7755

Contents

Christian Ulrik Andersen & Geoff Cox
Editorial: Before and After the Network **4**

Sudipto Basu
On the Ends of the Network as a Zone of Friction (and Extraction) **8**

Özgün Eylül İşcen
Revisiting Cognitive Mapping: Extractive Capitalism and Media Arts in The Middle East **28**

Juan Pablo Pacheco
Digital Hunters: Techno-Territories in the Age of Computational Surveillance **42**

Linda Kronman
Intuition Machines: Cognizers in Complex Human-Technical Assemblages **54**

Nicola Bozzi
Tagging Aesthetics: From Networks to Cultural Avatars **70**

Giseli Vasconcelos, Tatiana Wells and Cristina T. Ribas
Tactical Archives Cartography: Two Decades of Tactical Media and Art in Brazil Enhancing a Feminist Perspective **82**

Iuliia Glushneva
Translation (Dis)junctions, or Postsocialist Connectivity: Network Language Transfer and Cyberdubbing on the Runet **95**

Wenhao Bi
Assembling via Danmu: The Playful Networks of Bilibili **108**

Rebecca Holt
Pornifying the Network **120**

Wing Ki Lee
Network Unavailable: Platform, Performativity and the Everyday Life Decision-making Process in Contemporary Chinese Network Culture **130**

Contributors **142**

A Peer-Reviewed Newspaper Journal About_
ISSN: 2245-7755

Editors: Christian Ulrik Andersen and Geoff Cox
Published by: Digital Aesthetics Research Centre, Aarhus University
Design: Mark Simmonds, Liverpool

www.aprja.net

EDITORIAL

BEFORE AND AFTER THE NETWORK

Christian Ulrik Andersen
& Geoff Cox

APRJA Volume 9, Issue 1, 2020
ISSN 2245-7755

How do we think about networks under post-digital conditions? What does this imply for research?

This journal issue takes as its outset, the call of the transmediale festival to "[leave] behind a decade marked by a backlash against the Internet and the network society" in order to re-evaluate the limits of 'networks'. It refers to Robert Filliou's "The Eternal Network," an idealistic notion from the 1960s, pointing to the interconnectedness of everyday-life actions across an emerging global world at that time. This is a good reminder that network cultures exist beyond the technical reality of network culture as we now know it despite our primary identification of networks with social media and planetary computation. By drawing on the legacies of critical and autonomous network cultures, the aim was to make the limits of Internet-based networks visible but also highlight alternatives. Is there a conceivable counter-power to networks? Which alternative technological models and cultural narratives are needed to construct the principles of end-to-end communication anew? How might the critique of networks extend to non-western contexts and reflect the limits in a global perspective?

The periodizing logic of networks

To answer such complex questions, it may be useful to reflect on the periodizing logic that invites us to leave behind "the backlash against the Internet." What comes before and after the network?

The German media theorist Harmut Winkler has proposed that, in a historical perspective, the discourse around "new media" repeatedly emphasize the "anti-hierachical character of the new medium": an utopia where social mediation is suspended. Winkler, writing in 1997, quotes Tim Berners-Lee for saying "There will be an explosion; more and more people will write about themselves". The World Wide Web, in other words, came with a dream of a future that extends our social life into a universe where everyone becomes equal in the sense that every point in the network is equally far away (or close) to everyone, everyone author is equal, and everyone has the right to speak (unlike censored mass media): "Consensus-building appears to be superfluous, and it seems that the hierarchizing social machine has lost its power." (213-214)

The networked computer as a "social structure in a 1:1 map" and a "pure extension" of social interaction parallels a more general historical ideal of technical images. The construction of technical images has always claimed to come as a 1:1 reality without language, social conventions and compression: a "liberated [...] universe through which hope passes." In this sense, the utopia of networked media is yet another example of how technological media "chose the escape to iconicity;" or, media without representation (ibid). It is a discourse that fails to acknowledge both that signification is arbitrary and messy (mediated by someone, something, somewhere), and that the process of 'standardization' (that ignores the arbitrariness of media) is a recurring cultural figure: every (Western) social structure has always attempted to place its own iconic media in the universe. What other beginnings and ends of networks might there be?

Messy networks that fall apart

Networks are everywhere – intrinsic to all (de)centralized human and non-human 'business' and communication. However, the

once canonical model of centralized, decentralized and distributed networks is in need of differentiation and more detail today (as a cultural form as well as a socio-technical reality). This means broadening the discussion of networks to other ecologies that would include non-human elements such as animals, energy, clouds, climate, and so on. A key reference here might be Anna Lowenhaupt Tsing's work on matsutake mushrooms and global supply chains that define messy networks of ruin and regrowth, with people very much entangled with nonhuman entities. In a world increasingly defined by capitalist ecological devastation (and the spread of infectious disease, as we write), Tsing asks "What do you do when your world starts to fall apart? I go for a walk, and if I'm lucky, I find mushrooms." (1) Her argument is that it's not productive to dwell on destruction no matter how bleak the scenario may seem, as this perpetuates the same logic that produced it in the first place, but instead look to resilient life-forms that can suggest ways of surviving precarity and the messes we have created for ourselves. Even in the ruins we can find hopeful descriptions of supply chains that use networks productively to thrive as part of broader eco-systems, and that stress "ephemeral assemblages and multidirectional histories." (61)

There is a strong sense that despite this ever-lasting debate over networks and their potential to rethink eco-socio-technical structures, relatively little of this network thinking has permeated the artworld or research cultures in other than straightforward ways. The articles presented in this journal issue take up the invitation to explore this line of thinking and ask what it means to research networks, and more-over to think beyond the organizational logic of the academy to other forms of organizing knowledge production and distribution.[1] What are the limits of research networks and what would an end-to-end principle of research look like?

In each their own way the authors of this journal issue deconstruct the really existing and imaginary network; they highlight its cultural, political, ecological, geopolitical and colonial implications seen from diverse and local cultural contexts as well as the perspective of a globalization, and through various cultural and artistic practice they invite the reader to contemplate this beginnings and ends of networks.

Aarhus/London, July 2020

The publication of this journal follows a mail list discussion and workshop hosted by The Marshall McLuhan Salon at the Canadian Embassy in Berlin, in January 2020, organized by Digital Aesthetics Research Center (DARC) at Aarhus University, transmediale festival, Centre for the Study of The Networked Image at London South Bank University, and Global Emergent Media Lab (GEM-lab) at Concordia University. With additional thanks to Clemens Apprich, Joshua Neves, Søren Pold, Winnie Soon, and Magda Tyżlik-Carver.

Notes

[1] A raw and messy unedited version of the mail list exchange can be downloaded from https://transmediale.de/content/research-networks-1.

Works cited

"Robert Filliou defines the Eternal Network." *Youtube*. https://www.youtube.com/watch?v=9BgOfsG7J0Q. Accessed June 23, 2020.

"transmediale 2020 – End to End." *transmediale – art & digital culture*. https://2020.transmediale.de/festival-2020. Accessed June 23, 2020.

Tsing, Anna Lowenhaupt. *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton University Press, 2015.

Winkler, Hartmut. *Docuverse – Zur Medientheorie der Computer*. Boer, 1997.

Sudipto Basu

ON THE ENDS OF THE NETWORK AS A ZONE OF FRICTION (AND EXTRACTION)

Abstract

In a world-order where planetary computational networks have restructured nearly all spheres of existence, what is not already networked lies in wait merely as standing-reserve. Today, it seems as if the network and the world are naturally interoperable. Thinking through Harun Farocki's work on operational images, I however locate a zone of friction or incommensurability between the network and the world. Revisiting Norbert Wiener's anti-aircraft predictor – a founding episode in the history of cybernetics – I show how this gap was bridged by a logic of (en)closures that reduced the living human form and the world to narrow operational ends; banishing the openness and indeterminacy of both life and nature into undesirable contingency. However, cybernetics' relentless expansion into a universal episteme and planetary infrastructure since the Cold war necessarily floods the network with contingency; which it wards off by feeding on a disavowed living labor. I argue that this living labor is an uneasy reconciliation of mechanism and vitalism, which we may call *habits*. Drawing on the Marxian notion of general intellect, I posit how habits are key to generating network surplus value, and to cybernetic expansionism. Habits shape, prepare the outside for its subsumption into the network. Yet they are not given the status of productive activity, and consequently disavowed and vaporized by networks. I propose that this living labor be given a specific name – interfacing – and, following Georges Bataille's critique of political economy, speculate on the reasons for its disavowal. Drawing on Bataille's idea of the *general* in 'general economy' (that which is opposed to utilitarian or operational ends) and Hito Steyerl's *How Not to Be Seen*, I try to imagine what an interface contiguous with the *general* intellect might be.

APRJA Volume 9, Issue 1, 2020
ISSN 2245-7755

Figure 1: Colored lines mark out and report the 'zone of friction' where the machine-eye recognizes patterns in the noise of the world, in *Eye/Machine I-III*. Courtesy: Harun Farocki Filmproduktion.

I. The Incommensurability of the Network and the World

Harun Farocki's *Eye/Machine* series (2001-3) examines the deployment of intelligent weapon systems like course-correcting missiles during the first Gulf War, constructing a genealogy of the automated eye. Farocki shows us a series of diptychs composed of operational images – machine-readable images whose sole purpose is instrumental – sourced from the process screens and work tables of war rooms, battlefields, research laboratories, and various industries. This is often counterposed with archival footage from training and factory films, corporate ads, scientific diagrams, etc. to create a dialectical soft montage between two channels. In a way, *Eye/Machine* is the culmination of Farocki's career-long interest in modern visual forms (diagrams, maps, cinema, video, digital images, etc.), the techniques of war, governance and production, and the changing face of labor (which, in his Marxist worldview, is an expression of the very potential for a full creative life). Since Farocki traces an arc of the progressive automation of all spheres of life in his oeuvre, it would seem this arc matures in a total replacement of the man in the machine. Yet, many of the operational images in *Eye/Machine* show marks and lines in blue, red, green or yellow that laboriously trace vague patterns, often the outlines of things, on a live feed of surveillance images [Fig. 1]. We are amused as we watch these 'stupid' machines take inordinately long time to do banal tasks like opening a drawer or navigating a corridor. As in Henri Bergson's essay on the comic, our amusement derives from a certain "mechanical inelasticity" of the operational image. It is not quite present in the world, like the absent-minded singer who is always reflecting on the last line he has sung while the band has moved on. The operational image shows no habitual elegance as it breaks down simple cognitive tasks into the smallest logical parts until a workable 'fit' is found. Far from taking over human intelligence confidently and rendering us useless, the AI bots and operational images solicit our amusement, which soon turns to concern and attention. We become like parents pouring over the school progress report of a not particularly bright child, correcting their course, helping them learn to navigate the world. Those machines require *our* eyes.

In 2014, Trevor Paglen wrote of his attempted update of Farocki's *Eye/Machine* project:

> *After about six months of research, I came to a rather dramatic conclusion. Increasingly, operational images are not simply alien to humans—they are literally invisible. In retrospect, there's a kind of irony in Farocki's* Eye/Machine*. Farocki's film is not actually a film composed of operational images. It's a film composed of operational images that have been configured by machines to be interpretable by humans. Machines don't need funny animated yellow arrows and green boxes in grainy video footage to calculate trajectories or recognize moving bodies and objects. Those marks are for the benefit of humans—they're meant to show humans how a machine is seeing.*
>
> *My research project didn't get very far. After scores of phone calls and emails to the laboratories and companies where operational images get made, it became clear that machines rarely even bother making the meat-eye interpretable versions of their operational images that we saw in* Eye/Machine*. There's really no point. Meat-eyes are far too inefficient to see what's going on anyway. (Paglen)*

In a matter of a decade, the little colored marks in the operational image are gone. But if they were really as unimportant as Paglen implies, why did the eye/machines ever use them? Paglen believes that they were a ruse to maintain a humanistic illusion, a semblance of human superiority over the machine, but what then explains their later disappearance? Is the illusion of the overseer no more required? Was it then, in the past, merely window dressing or an essential part of image-operations? If the former is true, why would the machine risk breaking the myth of its omnipotence, allow itself to be humiliated before its human overseer? We have to account, then, for this dynamic of disappearance in/of the operational image.

The operational image differs, of course, from all other preceding types of images, since it does not represent the world so much as directly act and steer it towards an operational telos. A great film, painting or photograph might move its spectator to change the world (for good or bad), but there is always an indeterminacy and unbridgeable gap between the act of creation, its reception and its after effect/influence. Such images may be shaped by the world, they might even shape the world in turn, but this relation is always open, free of total determination. Not so for the operational image. Its relationship with the outside is strictly instrumental, which is why – once the job is done – the operational image is completely exhausted. It becomes junk that does not warrant a 'second reading,' ending up often in some secret storage where it never sees the light of the day again. [Resuscitating these images, Farocki intended to show that second readings are possible. Operational images aren't fully closed to interpretation and thought. No matter how small, an indeterminacy exists between action and reaction.] The operational image disappears the very moment when the world conforms to it, has become interoperable for a given purpose – leaving no apparent remainder. To operational images, the world is mere standing-reserve, waiting to be operationalized (Heidegger 19-20).

The cybernetic imaginary is then all-consuming, constantly expanding its frontiers, since it wants to subsume the whole earth, and all of its constitutive spheres of existence, inside the machine. This dream of total subsumption is however never fulfilled; there remains always an asymptotic gap, a zone of irritability or friction. While the world is composed of technical as well as natural

and social elements, it is not by-itself governed by the instrumental reason hardcoded into the network [which I understand as a machinic organization of natural, social and technical actors defined by operational logic and goal-orientedness]. The world escapes the network to some degree at every moment of subsumption; even as they become increasingly intertwined. The little colored marks in *Eye/Machine* register this irritability or friction, even as the operational image labors to overcome this friction by finding a requisite pattern in the 'raw data' of the world. Keeping with transmediale 2020's theme – End to End – I want to analyze the ends of the network as zones of friction where the outside is subsumed. The network's ends are thresholds beyond which lie the world still unsubordinated to its computational calculus. Network expansion into the world needs a particular dynamic by which this friction at its ends is overcome. As will become clear, living labor is key to this dynamic. Yet I shall argue how this is necessarily an attenuated living labor not given the status of productive activity; and, as a result, condemned, unreciprocated. But first, let us historicize the question a bit.

II. Cybernetics and the closed world

Immersed within ubiquitous planetary computing, it may seem difficult to imagine that the network and the world are not just non-coinciding, their relation may be incommensurable, if not outright antagonistic. However, a summary look at the origins of cybernetics in the milieu of World War II and the Cold War allows us to see friction haunting the scene of subsumption. What the 'origin story' reveals is the incommensurability of the world and the network. We find that, despite its expansionism, cybernetic imaginaries were shaped by a multi-level logic of enclosure.

Cybernetics started with a humble attempt to understand the nature of interaction and feedback in and between living beings and machines. The key experiment was an anti-aircraft predictor designed by Norbert Wiener's team during World War II: an early prototype of the intelligent weapon systems that fascinated Farocki in *Eye/Machine*. Wiener's task was to predict the path of an enemy fighter pilot who kept changing his trajectory anticipating ground artillery, to improve the chance of a successful hit. In a first move, Wiener assumed that all the components of the situation were 'communicating': the pilot with his plane, the gunner with his gun; even these two enemy cyborg units in their fight with each other. Yet there remained a problem since the pilot could potentially take an infinite number of routes (subject to aerodynamic and flight-hardware constraints). The problem space needed to be delimited, since approximating the flight path was more crucial than exhausting all possibilities. It turned out that the conditions of the battlefield allowed such a delimitation, since panic-stricken pilots facing flak, cooped up in claustrophobic metal chambers, experienced kinaesthetic dysphoria and behaved neurotically 'like a machine,' repeating the same motions over and over again (Galison 236). A pathology forcing the pilot to regress to his most unreflexive habits thereby made him programmable (and dead, if the computation and firing was done right). Closure was the very precondition – reducing the complexity of the outside – by which the enemy other could be subsumed into the cybernetic machine.

This phenomenological closure, partly bracketing the outside, was doubled by one that bracketed off the inside. Blackboxing erased distinctions in kind between man,

animal and machine by treating them all as systems that adapted to a change through feedback with their environments. The old mechanism vs. vitalism debate, for which the irreducibility of life was a persistent problem, was thereby bypassed. Not that cyberneticians misrecognized differences in kind between machines and organisms. Machines were initially proposed only as heuristically simplified analogs of thinking, living organisms – their equivalence established by demonstrating that both exhibited "purposive behavior" oriented towards a goal (Bowker 110). However, by a later 'Platonic backhand,' analogy was transformed into ontology (Hayles 12). Organisms were redefined as *essentially* machines, only with an exceptional degree of complexity and flexibility that artificial machines were not yet capable of (but would reach at some point). As Wiener's predictor showed, however, machine and organism could be equated at first only by robbing the latter of its supple openness to the world.

In Galison's memorable phrase, this logic of closure seeded an 'ontology of the enemy' into the heart of cybernetics. In game theory terms, Wiener understood the enemy pilot as an opponent who purposefully adapts to his changing situation; the challenge for the cybernetic machine was to 'think like the enemy' in order to pre-empt his next move. Yet, if the outside to be mapped was defined by antagonism, Wiener made a distinction between two kinds of opponents. There was the Manichean devil purposefully engaged in a battle of wits with the cybernetic machine, willing to use any trick or craft, even change the rules of the game. And there was the Augustinian, non-purposive opponent who might defeat the machine through an unforeseen contingency, but not out of malice. Nature, Wiener argued, is Augustinian – its entropic tendency for disorder is blind to a scientist's intention to understand it (190). While Wiener's predictor was directed against Manichean opponents, he opposed this assumption of Manichean malice when cybernetics was expanded from wartime research to an investigation of the world at large. Wiener's fellow scientists, with whom he fell out because they consented to the militarization of scientific research, had put the world in the crosshairs of a target. Like hapless detectives, Wiener rued, they were looking for crime in the forces of nature (189). In transforming into the signature 'universal science' of the Cold war, cybernetics had become a Manichean science that (mis)read nature's contingency as malice, privileging form and order over disorder. Cybernetics, Paul Edwards argued, was therefore not just born in a 'closed world' discursive milieu driven by Manichean anti-communist politics, its development was entangled in the project to create a "dome of global technological oversight" in which planetary sensing-computing mechanisms were tasked with pre-empting catastrophe (1).

However, cybernetic expansion could not happen without opening onto contingency and error. For this, the relationship between the scientific laboratory – the quintessentially modern site where trial-and-error experiments had been sandboxed since Robert Boyle – and the world at large needed to be reconfigured. If the lab had previously been a isolating space where the noisiness of the world (including political dissensus) was excluded even as scientists worked on its aspects – a space whose secretive activities needed translation by specialists to be validated in the public sphere – cybernetics folded the lab inside out, made the world into a laboratory (Bowker 122-123). Through a strategy of 'legitimacy exchange' at military-industrial academic fora, experts from various sciences (physical, chemical, microbiological, social, etc.) came to a consensus that cybernetics was best suited to deal with

complex problems of Cold war era society. As the modern successor of Adam Smith's 'invisible hand,' the emergentist, spontaneous helmsman (*kubernetes*) became the emblem of anti-(Soviet style) central planning ethos which merged with the neoliberal deregulation of markets, the shrinking role of the state as regulator/overseer, and the progressive immaterialization of capitalism. The proof of concept – whether cybernetics was at all appropriate as episteme and ontology of everything – was to be sought in the very world-lab where cybernetic interventions were being made (ibid). As Orit Halpern has argued, the demo became the dominant mode of these interventions; which reigns still as the ideologeme of our beta-tested capitalist times. Enshrined in Nicholas Negroponte's adage "demo or die!," the demo is a mode of apprehending the future which never arrives at any final form, but "hangs in an anticipatory, or preemptive time of anticipation for the next technical development" (Halpern 59). Demos suspend the question of how apt a cybernetic model is since every iteration looks forward to future improvements, while getting embedded in the world and remaking it. Contra Negroponte's slogan, even death is no serious impediment to its teleology of deferred success.

For the vitalist philosopher Georges Canguilhem, laboratorization was the very "archetype of a catastrophic situation" in which "the living being [is] commanded from the outside by the milieu" (113). Because it had generalized this catastrophe, cybernetics could not discard with vitalism despite itself privileging mechanistic reduction. Perhaps, says David Bates, the cybernetic dream was always "to infuse machinic beings with the essence of life" (32). If this vitalist impetus split, on one face, into the techno-utopias of California with their dream of planetary emergent architectures – Stewart Brand's *Whole Earth Catalog* being the key node – the other face of cybernetic investment in vitalism zeroed in on the organism's adaptivity to pathologies (cf. Turner; Franke and Diedrichsen). As vitalists like Canguilhem had stressed, living organisms faced with turbulent milieu or internal injuries show an inherent plasticity to not just "*respond* to changing conditions; [but] also... enter wholly new states of being, with new forms of order, and new potentials" (ibid 35). It was this quality of the living to respond to crisis that cyberneticians wanted to inculcate in machines. Wiener, for example, was deeply interested in neural plasticity, in the capacity of the brain to establish new norms and paths of communication even in pathological cases like Louis Pasteur's (whose early-life stroke incapacitated half his brain without impairing his intellectual capacities) (ibid 49-50). Cybernetic systems of the future aspired to a similar resilience and adaptivity. It is no coincidence that Paul Baran drew on such a 'plastic' topology to propose the distributed network model, which reacts to attack on some of its nodes and edges by readjusting the lines of communication.

To sum up then, I'm arguing that the incommensurability – or antagonism, if we follow Galison's 'ontology of the enemy' – between the cybernetic network and the world means that the zone of subsumption of the outside into the network is prone to crisis and breakdowns. Such crises only multiply as the network expands and encompasses the whole globe, penetrating into new realms of existence and accumulating huge amounts of 'raw data' through constant mining – an expansion that necessarily seeds the system with error and contingency. To overcome these crises, bridge the always existing gap between network and world, cybernetic assemblages draw upon the vital plasticity of the living organism. This is the reason why cybernetic networks need living labor more than ever today despite disavowing

and denigrating its relation of dependence. What is however notable, if we reflect upon Wiener's predictor experiment from the perspective of 'bridging the gap,' is a particular interplay between mechanism and vitalism. If Wiener drew upon the logic of closures to reduce the living organism – the enemy pilot – to the status of an 'unthinking automaton' guided solely by his habits, during crisis mediation it is on the other hand the living organism's *relative plasticity* that allows the network to subsume the outside. These two tendencies are not opposed to each other; they are complementary. As Wendy Chun suggests in her elegant formula "habit + crisis = update," habit as an inertial mode of opening to contingency guarantees that the network maintains homeostasis in an updated form instead of disintegrating into something qualitatively new. Habits, I argue now, are key to the cybernetic shaping of the general intellect and therefore central to operation by which the world is subsumed into the network.

III. Habits and the generic in General Intellect

If Farocki's oeuvre is celebrated today largely for his essay films on technologies of rationalization and modern visuality (cinema being one of its privileged subsets) – a genealogy of the operational image across titles like *Images of the World and the Inscription of War*, *As You See*, *Workers Leaving the Factory*, up to *Eye/Machine* and *Serious Games* – there is another unassuming series of observational videos/films running in parallel. With names like *Indoctrination*, *Interview*, and *How to Live in the FRG*, these films document, like the proverbial fly-on-the-wall, small groups of people in test-situations rehearsing for the future. They pick up new skills for service jobs (how to do a sales pitch, impress in an interview), practice scenes of social interaction (how to plan a group dinner, de-escalate domestic violence) and even learn the most efficient ways to live as such (how to wash a baby, cross the street, etc.) [Fig. 2]. Relatively ignored in critical literature on Farocki, these observational films concern the reciprocal human component and modes of subjectivation that complement the regime of the operational image. They show us the condition of "perpetual training" into which the school disperses in societies of control: knowledge and skills have to be regularly updated lest one becomes humanware-incompatible with the latest machines (Deleuze, "Postscript..." 5). These lab-like demos, which Farocki amusingly compares with product-testing in How to Live in the FRG, constitute the other face of the arc traced in Images of the World, Workers Leaving the Factory and Eye/Machine. If the latter films evince the increasing obsolescence of workers within formal spaces of production and war-making – the shrinking numbers of people who have to be paid wages – the observational films trace the increasing centrality of what autonomist Marxists call General Intellect within cybernetic capitalism.

For Marx – who in the *Grundrisse* already anticipated automation becoming the main productive force in due time, relegating the worker to the sidelines – general intellect is the aggregate of social and scientific knowledge concretized in machines which generate or augment value (Virno). Yet where Marx saw in this relegation of living labor its eventual outmoding as the foundation of value in capitalism (the machines of his time could not capture behavior outside the factory/workplace as data), theorists like Paolo Virno and Tiziana Terranova argue that the component of living labor participating in production of value only increases

Figure 2: Groups of stay-at-home mothers and nurses prepare for the future, learning the nitty-gritties of child care and delivery, in *How to Live in the FRG*. Courtesy: Harun Farocki Filmproduktion.

with cybernetic networks. This labor is not recognized as work, since it masquerades as playful sociality, and goes financially uncompensated (Terranova). Contra Marx, general intellect is composed, says Virno, of both social, scientific knowledge concretized in machines (dead labor) and the social competencies embedded in the human form (living labor). It is the sum of all generic capacities of sociality, including languages and embodied habits, perhaps even affects, desires and fantasies, that feed into capital's machines, get concretized, while remaining in excess of every act of subsumption. This quality of the generic in general intellect – with its connotations of the repetitive, redundant, formulaic – is central to the dynamic by which living labor subsumes the world, or the outside, into the cybernetic network, in the process generating surplus value.

But what does value in cybernetic systems derive from? Value emerges by extracting information from the 'raw data' incessantly generated by the expansion of networks into planetary ubiquitous computing. For Matteo Pasquinelli, network surplus value is created by algorithms that "translate *information into information* or accumulate information and extract metadata, that is *information about information*" (22). If information is the contemporary universal equivalent, the measure of all value, surplus value emerges through a constant redrawing of the lines between information and noise which gives form to, i.e. in-forms, raw data. This demarcation of information and noise raises a problem, since value can be generated only by opening to the unknown, extracting new information (as opposed to what the system already 'knows'). The network therefore must maintain an umbilical, constitutive relation with the world as standing-reserve. This new information must be assimilable: convertible into useful metadata which can improve algorithmic efficacy, able to "measure the values of social relations" (in links-per-node, for example) and predict mass behaviors (Pasquinelli 23-24). On the one hand then, information must be new; on the other, it must conform to the principle of homophily (must not be really heterogeneous) to guarantee the network's stability, its homeostasis.

This dialectical relation of value to the unknown, of the network to the world, was already immanent in Claude Shannon's widely adopted definition of information as the mathematical measure of uncertainty (Malaspina). In arguing that information necessarily means learning something new – computing the probabilities of an as yet-unknown event – Shannon saw its opposite not in noise but in redundancy (if a certain

message implies zero information but 100 percent redundancy, we learn nothing from it). Far from being opposed to noise, information is merely in-formed noise, resolved or computable uncertainty; while noise is always 'potential information.' This raises a paradox though: the moment uncertainty in raw data is in-formed, assimilated into the cognizing system, it risks becoming redundant, slipping out of its status as information. It does not anymore have value to the system unless it is re-formed, mobilized for something else (let's say, by becoming training data for future predictions). In Shannon's theory, then, redundancy appears as the nemesis of any information system, a friction-force impeding its efficiency. Yet this conceals the extent to which redundancy is a necessity in information systems, acting a minimum buffer or anchorage against noise. A certain amount of redundancy in 'raw data' in fact prepares the outside for its subsumption. Without it, the system would be fully open to contingency: unable to subsume the outside, it would be exhausted in infinite recursion. In the terms of second-order systems theory, any system has to therefore strike a balance between 'environmental openness' and 'operational closure' (Clarke 39).

Deleuze and Guattari go even further: challenging information theory's insistence on redundancy as merely a 'limitative condition' preventing the system from being drowned out by noise, they argue that redundancy is primary in any act of communication (79). Reading both information theory and linguistics as permeated by power, Deleuze and Guattari suggest that languages (whether 'natural,' mathematical or computational) are not formal but pragmatic questions in their essence, concerned with ordering. The elementary units of language are order-words, which "do not concern commands only, but every act that is linked to statements by a 'social obligation'" (ibid). The order-word acts upon the world, effects change. The relationship between order-word and act is one of redundancy: the act must repeat the word, conform to its order. To correct Shannnon's information theory, and foreground its pragmatic, social aspects, Deleuze and Guattari suggest revising the hierarchy assigned to information, noise and redundancy:

> *the redundancy of the order-word is instead primary and [...] information is only the minimal condition for the transmission of order-words (which is why the opposition to be made is not between noise and information but between all the indisciplines at work in language, and the order-word as discipline or "grammaticality") (Deleuze and Guattari 79).*

This is why the quality of the generic permeates general intellect on either side of the divide between machine (concretized scientific knowledge) and human (embodied social intelligence). Habits are redundancies in behavior that bind us to order, patterning mechanisms that allow metadata to emerge from raw data. In this sense, habits are strictly correlates of the tool-relation to the world borne by the operational image (and language). In a way, habits also erase the distinction within general intellect between living labor and dead labor/fixed capital. With the deterritorialization of the factory, fixed capital moves into the human living form: "the body of the labour force [...] become[s] the container of the function of fixed capital, that is machinery, 'codified knowledge' and 'productive grammars', in other words past labour" (Pasquinelli 15).

Farocki registers this machinic enslavement of the living form to cybernetic rationality in his observational films: we see a constant streamlining of behaviors which must conform to shifting goalposts, fit operational

Figure 3: A Playboy centerfold model struggles to maintain a difficult pose, fit into an operational ideal, in Farocki's *An Image* (1986). Courtesy: Harun Farocki Filmproduktion.

ideals, learn the passwords to success (or access). In Indoctrination, probably his cruelest film, Farocki documents a seminar on soft skills taken by aspiring executives. The instructor acts like a despotic superego: constantly pitting participants against each other, humiliating them for the smallest gesture of indiscipline, giving each a flexible feedback (which may be anywhere between congratulatory or demeaning). Social agonism is dissipated in intense competitiveness and jealousy, in internalizing perpetual inferiority (since we all fail the dictums of this despotic superego). It is the parsing out of the person into dividuals, decimating their autonomy. Yet, as Farocki shows, this is doubled by a subjectivation which relentlessly personalizes, produces subjects who internalize this violent modulation as an individual responsibility (Lazzarato 23-54). What for is this doubling required? Why must the shaping of habits to fit into the operational ideals lapse back into the oldest "habit of saying 'I'" (Deleuze, "Preface..." x)? The *Eye/Machine* images provide a clue: individuals have to intervene when the cybernetic 'abstract machine' fails to perform, breaks down, or is too slow to yield the desired result. They suture the gap between network and world; put the machine back on track. By what name do we call this habitual labor?

IV. General Intellect, Interface, General Economy

One of Farocki's observational films, which explicitly parallels the labor of fitting operational ideals in *Eye/Machine* I started this essay with, allows us to answer this question. In *An Image*, which takes us 'behind the scenes' of a Playboy photo shoot, we witness the despotic superego at work in the person of the fashion photographer. He makes the nude model – the apparent star – painfully strain her body to achieve the exact pose he demands [Fig. 3]. Her muscles quiver with tension as she freezes herself into an ergonomic impossibility until the right shot has been taken. Farocki's Brechtian gesture is to show us how the glossy, weightlessly seductive centerfold emerges through a detailed algorithm of eroticism that feeds upon but ultimately vaporizes bodily labor. In the moment of sexually charged immersion that a Playboy reader experiences though, it would be impossible to think of this labor of mediation. The parallel with *Eye/Machine*, I believe, lies in this disappearing mediation. The arduous labor of fitting into an 'operational ideal' which both the model and the machine-eye

engage in is ultimately evaporated. For the Playboy reader immersed in the centerfold as well as for the user surrounded by operational images, it is as if there was never any friction. This, as we know from media theory, is the dynamic of the interface: which modulates between opacity and transparency, immersivity and hypermediacy, inter-activity and passivity, being a tool (that one uses consciously) and media environment (which one forgets about). I am therefore calling the zone of friction between the network and the world *interface* and the labor that sutures the two, minimizes their friction, *interfacing*.

This calls for some clarification. One agrees that operational images are interfaces in the standard language of computing – coupled as they are with the ability to interact with underlying algorithms and participate in the cybernetic feedback loop – but in what sense is the Playboy centerfold an interface. Do we risk eliding the technicalities and concrete textualities of the interface by making it into a metaphor? Perhaps, but I do believe that computational interfaces (GUIs, ambient no-UI objects, etc.) are a particular instance of a general organizational, relational principle in the world today: "it constitutes the gateway through which the reservoir of human agency and experience is situated with respect to all that stands outside of it" (Hookway 1). For Branden Hookway, "the interface is [...] a *form of relation*. [...] what is most essential to a description of the interface lies not in the qualities of an entity or in lineages of devices or technologies, but rather in the qualities of relation between entities" (4). The interface's dominance is established in the very fact that it appears to us as merely technical as opposed to fundamentally an episteme or *dispositif*, a mode of being in and relating with the world. It relentlessly spatializes and segments the life-world into layers, whose borders are contact zones which frame the relationship of one layer to another, all the way down; coordinating and setting off distant actions and information loops across scales and temporalities. Benjamin Bratton proposes along these lines a six-layered stack of planetary computation composed of earth, cloud, city, address, interface, and user, that has replaced the state as the sovereign since the Second World War (2015). What characterizes the interface, once we think of it as an organizational principle embedded in everyday life, is that it diffuses the chaotic complexity of the globally networked system – one which eludes the cognitive grasp of a generic user – into an apparent simplicity which this user can interact with effortlessly as if it were natural. It is this valence of the interface as a modulator of habits, complexities and contradictions that I am interested in. This makes the Playboy centerfold an interface as much as Farocki's operational images; both mould habits of perception and action, occlude the material-historical substrate of their production, and generate value by patterning behaviors.

Therefore I am interested in the interface less as an object than as a mode of mediation; a method of mitigating friction between contiguous, but not yet fully interoperable, regimes (Galloway). Interface is necessarily a feedback relation between any system and its complex outside, by which a code of higher complexity is converted into a more manageable one. This reduction of complexity and translation of codes may happen in both directions, even simultaneously. So if end-user interfaces flatten out the complicated mechanics of machine languages, codes and protocols of cybernetic networks (entangled with distant global processes and multiple temporalities) into ludic, real-time immersive experiences; they also feed upon habitual living labor to pattern metadata, extract information out of the noise of the world, and thereby generate surplus value. On one hand, interfaces

im-mediate the materiality of networks and its biogeopolitical substrates; on the other, they suspend our consciousness of always secreting data into the network, abetting its expansion deeper into the world and the living body. The interface is thereby as much a surface of connection as separation, policing boundaries between information and noise, determining what is useful and what is excessive. Galloway sees the interface as an effect of subsuming the outside which tends to drop out of consciousness if the constitutive friction between two layers is minimized or stabilized (absorbed into the machine's architecture, concretized in specific habits or fixed into the protocols of any organization). Until, that is, a breakdown foregrounds the interface again, calling on living labor to intervene in the state of exception.

The interface is then co-extensive with the shaping of the general intellect across the machine/ human divide; the process by which the network negotiates with the human body (by augmenting, reshaping or competing with it) to fulfill certain operations, and subsume the outside. Nishant Shah reminds us, drawing on Jennifer Light's work, that in the days of the mainframe, computers referred to the women who manually processed code in addition to the machine itself. Their immaterial labor linked the various material components of the mainframe, smoothened its various kinks. For Shah, the "woman's body was the first interface of mainframe computing" (184). Yet just as the computer became 'personal,' this gendered meaning of computing was forgotten: feminine presence persisting only as a faint echo in the affective intimacy binding computer and user. While the human-computer interface is not the only network interface, this is why I believe the component of living labor can never be discounted in any interface critique. The interface is the site where two contradictory drives of automation are reconciled: on one hand the tendency to evict human bodies in the machine which slow down automative efficiency (and drive down profit margins); on the other, the need for the relative plasticity of living humans to complete and expand the cybernetic circuit further into the world. The interface is, then, situated in the frictions posed by both the human and the network.

Hookway poses the interface as another kind of reconciliation of two tendencies: it is both a space of passive habitation delimiting the possibilities of actions (an environment constantly tracking the unconscious habitual movements of its dividual subject-users) and a portal opening up "otherwise unavailable phenomena, conditions, situations, and territories for exploration, use, participation, and exploitation" to an active, synthesizing subject-user (5). In this latter active mode, the interface augments the user's capacities, allowing them to expand the reach of the network into qualitatively new terrains. The outside is made interoperable, given a *surface* – a facing-towards the network – by the user's labor of abstraction. Matteo Pasquinelli rebuffs the common inclination in leftist theory to oppose capital's computational drive – abstract, alienating – against the incomputable-but-concrete eros of life ("The Labour of Abstraction"). For Pasquinelli, this misrecognizes that life is not given as an immediate, concrete condition to the self but involves working with/through heterogeneities and abstractions: the organism prevails in a volatile milieu by creating an interior milieu, establishing norms. Far from being opposed to abstraction, the commons of life (general intellect) have a greater power of abstraction than the capitalist abstract machine – which cultivates, shapes and ultimately absorbs this power in a reduced form. The interface can integrate new territory into the network only because the labor of abstraction performed by users, who make sense of the world on its behalf by synthesizing perceptions, deciding

actions, and creating a miniature cognitive map. The interface is akin to a gamespace defined by protocols and codes, dependent on players to work through and exhaust all possible trajectories. In *The Metainterface*, Christian Ulrik Andersen and Søren Pold identify this as the ergodic drive inherent to the interface. Like gamespaces, the interface allows a paradoxical kind of freedom in confinement: precisely by stepping into the arena of play, working with/in given rules of engagement, can one seek new trajectories or relations with other entities (Hookway 32-39). Each move is in turn inscribed by the interface into the algorithm, increasing the network's overall complexity, establishing a relation of control with the outside. The interface-as-gamespace however produces an effect of immediation: the friction of its textual codes is evaporated and experienced simply as the pleasurable agonism of chasing an elusive opponent or target.

What, of course, aids this effect of immediation today is a massive redistribution of materiality away from end-users into back-end cloud computing infrastructures – the interface made contiguous with the built world. "The best interface is no interface," declares a recent design handbook meant to usher in a screen-less world (Krishna). Not content with just this shifting away of heavy materiality, the author (a design innovator at Google) bemoans a culture of too many apps that require constant attention. Build a world of background computing oriented towards better user experience, scratch the tens of user interfaces that constantly vie for our attention, he proffers. Yet as Andersen and Pold insist, no matter how immersive the user experience, the interface will persist at some meta-level as a threshold of friction. The interface is nothing if not the mediation of friction between the network and the world (or what amounts to the same thing, between entities in a heavily networked world). The interface mediates not just technological, material frictions, it exacerbates and modulates social frictions.

As Shah's example of early women computers clarifies, the undifferentiated notion of the human in speaking of human-computer interfaces elides the politics of capital, which feeds on and exacerbates prior social frictions (the male-female wage gap deriving from the denigration of the 'menial' labor) since it wants to pay the lowest costs possible for the greatest profits. Since living labor is disavowed by the machine's rhetoric of smooth efficiency, interfacing bodies are structurally predisposed to be minorities: women, persons of color, third world precariat rendered vulnerable by lax labor laws and so on. Anna Tsing's ethnography of global supply chains foregrounds precisely this constitutive friction in the big picture of Capital – which is genetically made up of multiplicity and difference (2009). Capital is itself a monstrous metainterface between lifeworlds, communities and identities at odds with one another, jostling to get a hold on the same scarce resources and opportunities. Here the interface mediates difference on capital's behalf: distributing labor, precarities and access across the globe unevenly. It remakes territories, introduces new partitions, modulates social frictions and optimizes lines of operationality to extract maximum surplus value at minimum cost. Interfacing is then a binary conjunctive-disjunctive operation of Capital on its pre-existing ground: on one hand it connects things up intensely; on the other, it extracts, separates quantities from qualities, form from formless, labor from life, etc. The more capital penetrates into new lifeworlds – things and beings get more networked – interfaces have to proliferate to mediate the multiplication of living labor and borders (Mezzadra and Neilson; Rossiter). However, the interface occludes the grounding of capital in this radically heterogeneous

social totality, rendering it as far as possible into a homogeneous, frictionless experience. Difference is not so much obliterated as disavowed, neutralized. Networks privilege homophily over xenophily; centralized platforms restrict internet experience to a few sites/apps which generate high network surplus value for megacorporations (Chun, "Queering Homophily"; Kaeppelin). The interface as a blackboxed mediation of the social totality is therefore the very nemesis of Jameson's cognitive mapping (Galloway 99).

Perhaps, this analysis may be steered towards a more speculative vein for further research. In seeing the interface as the dominant dynamic by which the network expands into the world, we have so far taken the 'view from the inside' and sided with its logic of giving form to the outside. A different perspective emerges if we take a view from the outside, since no subsumption happens without remaindering. Every violent imposition of form on existing social-natural totalities at the interface excretes a certain amount of formlessness, excludes something as noise. Yet, the formless is not just the excreted, it is the very ground on which form is built (Franklin 3). Cyberculture has an apt name for value extraction from an endless flow of accumulating shit, from outdated files, formats and versions, to junk bought online that lies in the garage, and the piling material e-waste of our media lives: crapularity. "In a general sense, the Crapularity is a form of accumulation of capital" (Cramer 1). This allows us to read the interface as co-extensive not just with the general intellect but also with what we may call, following Georges Bataille, a general economy of information/noise.

Published in 1949, the year after Wiener's *Cybernetics*, Bataille's *The Accursed Share: An Essay on General Economy* was a heterodox critique of political economy (including the Marxist variant) from the point of view of excess. While most economists take the scarcity of energy as the founding fact of political economy and propose a rational calculus to manage this finite amount of wealth, Bataille argued that nature is on the contrary characterized by excess energy constantly spent without purpose, vastly overflowing all possible systems of capture. The sun gifts energy in the form of heat and light with no self-interest, enabling all life on Earth. However, dominant economic thought (restricted political economy as opposed to his general economy) is founded on a utilitarianism that disavows nature's principle of non-productive expenditure. Haunted by visions of scarcity, economists want to put all of this gifted energy to use: arrest this formless excess in form and hoard it up as wealth for the future. Thereby, they ignore the complete otherness of this excess energy, its excessiveness to human purpose. The result is a perverse sovereignty in which pleasure is always deferred or restricted to mere use; a society whose profane realm (dictated by rational utilitarianism) is increasingly repelled from a disavowed sacred realm (activities like sexuality, games, sacrifice, revolt and war that destroy form, gloriously consume energy, producing no surplus value). With roots in the Protestant ethic of capitalism, this thorough profanation of life culminates in the whole world becoming a standing-reserve for future use. For Bataille, this perversion of the cosmic principle of non-productive expenditure institutes the structural violence of capitalism. The separation of form from formless is consigned to social others, who are remaindered as waste (surplus populations), since their labor of retrieving value from accursed matter remains unacknowledged, unreciprocated (Bataille, "Definition of Heterology" 36-37). In Marxian terms: first, the formal subsumption of the outside expels the excessive matter or energy which founds the value-form as the formless (waste); it confers non-productive status on a range

of activities. Then in real subsumption, pre-existing social ties of obligation are sundered and racialized, gendered, classed surplus populations are produced (Franklin 3).

Formulated in the same Cold War context, general economy and cybernetics had shared roots in thermodynamic notions of entropy and order. Both moreover were ostensible attempts to chalk out universal epistemes cutting through academic specialization, if with different universal equivalents: energy contra information. Yet, while cyberneticians were predisposed to find order out of noise – privileging form over formless, homeostasis over xenophily – Bataille professed an ethics of non-productive expenditure, urging that all forms and restricted use-values be decimated by contingency. Formulated in a postwar world divided into two enemy blocs, damming up huge reserves of energy for an eventual nuclear catastrophe, cybernetics and general economy were diametrically opposed responses to the same historical problem – how to manage natural excess in a society which, in thermodynamic terms, was the hottest ever (paradoxically locked into a 'cold war')? Cybernetics, as we have seen, took a Manichean view: enclosing the world to ward off contingency, hoping to make use of all excess (noise as always potentially information, of value). We do not know if Bataille wrote directly on cybernetics, but he surely would have seen in it a hubristic human imposture against the principle of useless expenditure. A general economy of cybernetics would necessarily begin from the excessiveness of noise to notions of value. It would see the petty stupidity of making the world into a standing-reserve to avert crisis. The problem, for Bataille, lies not in having insufficient reserves for the future. It lies in the fact that capitalist utilitarianism banishes non-productivity and sacrifice, considers all that exceeds its narrow ends a danger to be averted. From Bataille's perspective, storage and the Protestant work ethic is the crisis; the impoverishment of living experience in latent paranoia. To read the interface as co-extensive with the general intellect and general economy is to recognize what Bataille meant by the *general*. The general is opposed to the restricted realm of use: it necessarily exceeds utilitarian habits, profits and the common good, reaching for the ecstatic. From Bataille's perspective, the normative interface only cuts the world down to its own size while subsuming it: "giv[es] a frock coat to what is, a mathematical frock coat" (Bataille, "Formless"). The general interface necessarily exceeds use-value and operationality: breaks with the utilitarian reconciliation of the Good, the Useful and the True. It releases the world from subservience to human will and needs, just as it frees the living human form into an open plasticity, and lets the machine play unreservedly with indeterminacy and error.

Hito Steyerl's video essay *How Not To Be Seen* (2013) presents an ironic version of a general interface. Ostensibly an algorithmic primer on evading the panoptic eye of states and corporations, Steyerl undercuts the titular question with deadpan nonsense which is neither useful, nor abides by its own algorithmic schema. For example, 'lesson II: seven ways to be invisible in plain sight' goes, "Pretend you are not there. Hide in plain sight." Then, as if talking of one who's phubbing and at the same time an avatar inside the smartphone interface, the robotic voiceover continues: "To scroll, to wipe, to zoom, to pinch, to take a picture, to take a picture." As if the phone is a magical machine that disappears people with the simplest actions. The video image is itself an interface of stock optics and web 1.0-style bright digital blocks layered over greenscreen shots of Steyerl and others performing [Fig. 4]. The screen is filled with digital crap detourned from cheesy simulations and commercial

Figure 4: Hito Steyerl's playful 'general interface' composed of stock optics, bright colored blocks and greenscreen graphics into which the body disappears. From *How Not to Be Seen*. Courtesy: Hito Steyerl.

platforms. Steyerl's central concern, though, is one specific genre of interface: aerial maps that, as their present avatar Google Earth (or higher fidelity military apps), are the visual epitome of the world made into standing-reserve. Identified with the military's Apollonian gaze, aerial maps put the world at the crosshairs of a target – culminating, as we have seen, in the self-annihilating images of 'suicide bomb' cameras in *Eye/Machine*.

As symptoms of the cybernetic drive to subsume the whole earth, aerial maps, however, come up against the limits of panopticism. They are constrained by resolution, which dictates the threshold of visibility up to which the Apollonian eye can zoom in. Beneath this threshold, Steyerl argues, lies the invisible multitude of today, unaccounted for by the panoptic view from above [Fig. 5]. The digital 'revolution' coincided with the disappearance of 170 thousand people, the robo-voiceover says, mostly in war crimes and state-led pogroms. This capitalist transition has also 'disappeared' a large mercenary workforce that "hold[s] the vectors of the mesh and keep the [digital] picture together" (Steyerl, *Wretched of the Screen* 121-151). It is not just missing people though. Steyerl makes a lot out of a 1951 US Air Force resolution target painted on a patch of asphalt in California's desert to calibrate aerial images, decommissioned when the military stopped using analog cameras in favor of high-resolution digital cameras. The ruin of digital culture piles up unacknowledged due to network expansionism and its updates.

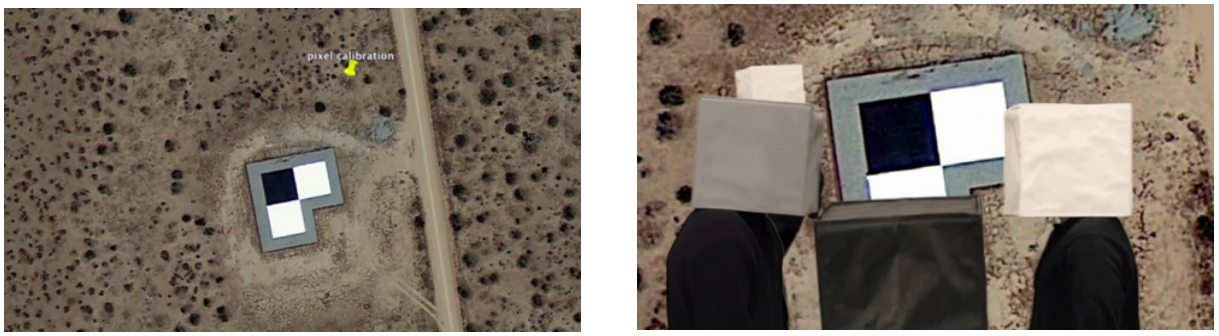


Figure 5: A pixel-based resolution target for digital aerial photographs. Proxy people disappear below the threshold of visibility (i.e. of resolution) as "rogue pixels." From *How Not to Be Seen*. Courtesy: Hito Steyerl.

Figure 6: The low-resolution Google Earth simulation takes over the 'real' HD landscape, at the site of the decommissioned 1951 USAF resolution target. From *How Not to Be Seen*. Courtesy: Hito Steyerl.

In the cracks of the target, Steyerl says, the digital multitude hides out as rogue pixels. Exhausted, fatigued, this multitude is not the revolutionary masses of yore. They simply want to be let be; they refuse to be counted, represented, conscripted. Bodies wrapped in green bodysuits and burqas (Steyerl's sly reference to Islamophobic cultural politics), 'proxy people' disappear as ghostly generic humans into the gleaming 3D animations made by realtors to sell the swanky malls and condos of the future. In the finale at the site of the 1951 resolution target, Steyerl sets up a green screen against the desert landscape. Yet the boundaries distinguishing the 'real' landscape and the simulated interface on the greenscreen gets blurred: the former is suddenly taken over by its low-res Google Earth copy and, Steyerl jokes, her film crew is held hostage by the rogue pixels [Fig. 6]. The pixels arrest time finally in a low res GIF loop.

Steyerl's general interface not only revives the remains of network culture – missing people, lost formats, stock graphics – it makes fun of the utilitarian realism of cybernetics and its cult of high resolution. Despite radically deterritorializing the capacities of thought and vision beyond human limits, cybernetics naively wants to tether these to its pathetic ends of world domination. Cybernetic capital believes that better Earth images necessarily mean better control, perhaps even better quality, of life. A life without crises and surprises, where all that lies outside is transparent, up for the taking, while the algorithms themselves get murkier, retreat into blackboxes controlled by corporations. With her idea of proxy politics – where truth finds no representation and viral spam proliferates – Steyerl opens the way for us to break free of our habits. If operational images enchain us and instrumentalize our relationship to the world through habits that pattern metadata – making our bodies into a kind of fixed capital – Steyerl insists that the proxy avatar not aid the network in increasing its high-resolution. It is not that, for a better world, we must ask the digital world-picture to correspond more closely with our 'real' embodied experience. Instead, our proxyselves must leave behind the belief that the network and the world be made commensurable, widen the chasm that exists between them.

Works cited:

Andersen, Christian Ulrik and Søren Bro Pold. *The Metainterface: The Art of Platforms, Cities, and Clouds*. The MIT Press, 2018.

Baran, Paul. *On Distributed Communications: I. Introduction to Distributed Communications Networks*. The Rand Corporation, 1964, www.rand.org/content/dam/rand/pubs/research_memoranda/ 2006/RM3420.pdf

Bates, David W. "Unity, Plasticity, Catastrophe: Order and Pathology in the Cybernetic Era." *Catastrophes: A History and Theory of an Operative Concept*, edited by Nitzan Lebovic and Andreas Killen, De Gruyter Oldenbourg, 2014, pp. 32-54.

Bataille, Georges. "Formless." *Visions of Excess: Selected Writings, 1927-1939*, edited by Allan Stoekl, University of Minnesota Press, 1985, p. 31.

____. *The Accursed Share: An Essay on General Economy. Volume I: Consumption*, translated by Robert Hurley, Zone Books, 1988.

____. The Accursed Share: An Essay on General Economy. Volume II: The History of Eroticism, and Volume III: Sovereignty, translated by Robert Hurley, Zone Books, 1991.

____. "Definition of Heterology." *Theory, Culture & Society*, Vol. 35(4–5), 2018, pp. 29-40.

Bergson, Henri. *Laughter: An Essay on the Meaning of Comic*. Project Gutenberg, 2003, www.gutenberg.org/files/4352/4352-h/4352-h.htm

Bowker, Geoffrey C. "How to be Universal. Some Cybernetic Strategies, 1943-70." *Social Studies of Science*, Vol. 23, No. 1, February 1993, pp. 107-127. JSTOR, www.jstor.org/stable/285691

Bratton, Benjamin. *The Stack: On Software and Sovereignty*. The MIT Press, 2015.

Canguilhem, Georges. *Knowledge of Life*. Fordham University Press, 2008.

Chun, Wendy Hui Kyong. *Updating to Remain the Same: Habitual New Media*. The MIT Press, 2016.

____. "Queerying Homophily." *Pattern Discrimination*. Meson press, 2018, pp. 59-97.

Clarke, Bruce. "Heinz von Foerster's Demons: The Emergence of Second-Order Systems Theory." *Emergence and Embodiment: New Essays on Second Order Systems Theory*, edited by Bruce Clarke and Mark B.N. Hansen, Duke University Press, 2009, pp. 34-61.

Cramer, Florian. "Crapularity Aesthetics." *Making & Breaking* 01, 2019, pp. 1-8, makingandbreaking. org/wp-content/uploads/2018/11/Cramer_Crapularity_Aesthetics-Making_and_Breaking-1.pdf

Deleuze, Gilles. "Postscript on the Societies of Control." *October*, Vol. 59 (Winter, 1992), pp. 3-7.

____. "Preface to the English Language Edition." *Empiricism and Subjectivity: An Essay on Hume's Theory of Human Nature*, translated by Constantin V. Boundas, Columbia University Press, 2001, pp. ix-x.

Farocki, Harun. “Phantom Images.” *public* 29, 2004, public.journals.yorku.ca/index.php/public/ article/view/30354

_____. *As You See* AKA *Wie man sieht*. Harun Farocki Filmproduktion, 1986.

_____. *An Image* AKA *Ein Bild*. Harun Farocki Filmproduktion and SFB, 1986.

_____. *Eye/Machine I-III* AKA *Auge/Maschine*. Harun Farocki, 2001-03.

_____. *How to Live in the Federal Republic of Germany* AKA *Leben – BRD*. Harun Farocki Filmproduktion, ZDF and La Sept, 1990.

_____. *Images of the World and the Inscription of War* AKA *Bilder der Welt und Inschrift des Krieges*. Harun Farocki Filmproduktion, 1988.

_____. *Indoctrination* AKA *Die Schulung*. SWF, 1987.

_____. *The Interview* AKA *Die Bewerbung*. Harun Farocki Filmproduktion, 1986.

_____. Serious Games I-IV AKA Ernste Spiele I-IV. Harun Farocki Filmproduktion, 2009-10.

_____. *Workers Leaving the Factory* AKA *Arbeiter verlassen die Fabrik*. Harun Farocki Filmproduktion, 1995.

Franke, Anselm and Diedrich Diedrichsen, editors. *The Whole Earth: California and the Disappearance of the Outside*. Sternberg Press, 2013.

Franklin, Seb. “The Context of Forms.” *World picture* 11, Summer 2016, pp. 1-23. www.world picturejournal.com/WP_11/pdfs/Franklin_WP_11.pdf

Galison, Peter. “The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision.” *Critical Inquiry*, Vol. 21, No. 1, Autumn 1994, pp. 228-266. JSTOR, www.jstor.org/stable/1343893

Galloway, Alexander R. *The Interface Effect*. Polity Press, 2012.

Halpern, Orit. “The Trauma Machine: Demos, Immersive Technologies and the Politics of Simulation.” *Alleys of Your Mind: Augmented Intelligence and Its Traumas*, edited by Matteo Pasquinelli. Meson press, 2015, pp. 53-67.

Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. University of Chicago Press, 1999.

Heidegger, Martin. “The Question Concerning Technology.” *The Question Concerning Technology and Other Essays*, translated by William Lovitt, Garland Publishing, 1977, pp. 3-35.

Hookway, Branden. *Interface*. The MIT Press, 2014.

Kaeppelin, Joséphine. “Joséphine is Surfing.” *Strabic*, 9 décembre 2011, strabic.fr/JOSEPHINE-IS-SURFING

Krishna, Golden. *The Best Interface Is No Interface: The Simple Path to Brilliant Technology*. New Riders, 2015.

Lazzarato, Maurizio. *Signs and Machines: Capitalism and the Production of Subjectivity*. Translated by Joshua David Jordan, Semiotext(e), 2014.

Malaspina, Cecile. *An Epistemology of Noise*. Bloomsbury, 2018.

Mezzadra, Sandro and Brett Neilson. *Border as Method, or, The Multiplication of Labor*. Duke University Press, 2013.

Pasquinelli, Matteo. "Machinic Capitalism and Network Surplus Value: Notes on the Political Economy of the Turing Machine." Unpublished paper, delivered at the *Joy Forever: Political Economy of Social Creativity* Conference in Warsaw, October 2011, pp. 1-28. Lust for Life, lust-for-life.org/Lust-For-Life/_Textual/MatteoPasquinelli_MachinicCapitalismAndNetworkSurplusValue-NotesOnThePoliticalEconomyOfTheTuringMachine_2011_28pp/MatteoPasquinelli_MachinicCapitalismAndNetworkSurplusValue-NotesOnThePoliticalEconomyOfTheTuringMachine_2011_28pp.pdf

____. "The Labour of Abstraction: Seven Transitional Theses on Marxism and Accelerationism." *Fillip* 19, Spring 2014, fillip.ca/content/the-labour-of-abstraction

Paglen, Trevor. "Operational Images." *E-flux* Journal, No. 59, November 2014, www.e-flux.com/ journal/59/61130/operational-images/

Rossiter, Ned. *Software, Infrastructure, Labor: A Media Theory of Logistical Nightmares*. Routledge, 2016.

Shah, Nishant. "From GUI to No-UI: Locating the interface for the Internet of Things." *Digitisation: Theories and Concepts for Empirical Cultural Research*, edited by Gertraud Koch, Routledge, 2017, pp. 179-196.

Steyerl, Hito. *The Wretched of the Screen*. Sternberg Press, 2012.

____. "Proxy Politics: Signal and Noise." *E-flux* Journal, No. 60, December 2014, www.e-flux.com/ journal/60/61045/proxy-politics-signal-and-noise/

____. *How Not to be Seen: A Fucking Didactic Educational .MOV File*. 2013.

Terranova, Tiziana. "Free Labor: Producing Culture for the Digital Economy." *Social Text*, 63 (Vol. 18, No. 2), Summer 2000, pp. 33-58. Project MUSE, muse.jhu.edu/article/31873

Tsing, Anna. "Supply Chains and the Human Condition." *Rethinking Marxism*, Vol. 21 No. 2, April 2009, pp. 148-176.

Turner, Fred. *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism*. University of Chicago Books, 2006.

Virno, Paolo. "General Intellect." *Generation Online*, translated by Arianna Bove, 2001, www.generation-online.org/p/fpvirno10.htm

Wiener, Norbert. *The Human Use of Human Beings: Cybernetics and Society*. Free Association Books, 1989.

Özgün Eylül İşcen

REVISITING COGNITIVE MAPPING: EXTRACTIVE CAPITALISM AND MEDIA ARTS IN THE MIDDLE EAST

Abstract

The increasingly complex, algorithmically mediated operations of global capital have only deepened the gap between the social order as a whole and its lived experience. Yet, Fredric Jameson's notion of cognitive mapping, attentive to the conflicting tendencies of capitalist operations, is still helpful for addressing the local instantiations of capital's expanding frontiers of extraction. I am interested in tracing the historicity of those operations as well as the totality they are actively part of in the present from the vantage point of the Middle East, especially along with the entangled trajectories of oil, finance, and militarism. To this end, I examine countervisual practices in the realm of media arts that contest the aesthetic regime through which the state-capital nexus attempts to legitimize its imperial logic and violence. My reconfiguration of cognitive mapping as countervisuality in Nicholas Mirzoeff's terms demonstrates that there is no privileged position or method of cognitive mapping, which ultimately corresponds to an active negotiation of urban space across the Global North/South divide.

APRJA Volume 9, Issue 1, 2020
ISSN 2245-7755

Introduction

In the aftermath of the uprisings that swept the Middle East and North Africa since 2011, the emergent networked publics have become a promising site to investigate the cathartic role of computational media in social movements. Given the centrality of the same technologies to the ongoing military conflicts and urban developments in the Middle East, Miriyam Aouragh and Paula Chakravartty encourage us to pay attention to "the United States and other Western colonial powers' legacy of occupation, ongoing violence, and strategic interests in the region" (359). The entangled trajectories of oil, finance, and militarism in the wake of neoliberal globalization since the 1970s have evolved into an information regime of necropolitics, intensifying with the U.S. led global counterinsurgency, along with the expanding Israeli occupation of Palestine, which has become a testing ground for varied militarized technologies and tactics for urban control.[1]

Moreover, the Arabian Gulf states have become logistic hubs from which US-led wars and interventions in the region are coordinated, thereby developing into a commercial-military-humanitarian nexus (Ziadah). The Gulf Cooperation Council (GCC), a regional bloc of the six oil-rich Arab monarchies (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) founded in 1981, has been closely tied to the rise of the United States as the major global power due to its role in the oil-centered economy, financialization, and global supply chain (Hanieh, *Money, Markets, and Monarchies* 2-3). The tangle of highways, skyscrapers, and megaprojects manifest the almost universal adoption of the neoliberal agenda by Arab governments from the 1990s onwards. Challenging the simplistic rentier state framework, Adam Hanieh identifies a capitalist class that he calls "Khaleeji Capital," which is dominated by a few massive conglomerates structured around a Saudi-Emirati axis (*Capitalism and Class* 2). This local capitalist class draws its profits from its regional and international export of capital as well as the very deep exploitation of non-citizen labor.

Accordingly, I situate the Middle East as a fruitful setting for examining contemporary frontiers of extractive capitalism that have operationalized computational media as an imperial apparatus, thereby underscoring the continuum between smart weapons, cities, and futures. In contrast to the high-tech, post-oil spectacles of Gulf capital, such as Dubai (the UAE), I look at the war-torn and toxic cities that are spreading in the rest of the region, such as Beirut (Lebanon), due to the violent operations of militarized states as well as the ever-growing economic and ecological deterioration. Indeed, this contrast illustrates the massively polarized accumulation of wealth and class formation in the region.

The colonial and neoliberal underpinnings of computational media heighten the necessity of attending to seemingly distant events and sites all at once, which are tied together under the extractive operations of global capital today. Diverging from content and platform fetishism, as Jonathan Beller argues, we need to delve into the geopolitical implementations of these media formations, which are inseparable from both political economy and the ongoing legacy of coloniality. According to Beller, "we must do more than focus on *technics*; we must attend to the surround," that have instrumentalized today's machines as and within the matrix of racial capitalism (3).

Inspired by Sandro Mezzadra and Brett Neilson's emphasis on the material specificity of capitalist operations, I interpret 'the surround' as the sites of extraction – where "capital hits the ground" (138). Their idea of

extraction in the expanded sense connects the abstract processes of datafication and financialization to the material conditions of extraction of natural resources, land, labor, and human sociality.[2] These multiple outsides, however, involve not only territorial expansions but also social hierarchies predicated on race and gender, integral to the operative unification of infrastructures, techniques, and institutions under the capitalist logic. Thus, Jameson's attentiveness to the conflicting tendencies of capitalist operations, unifying and differentiating at once, is still helpful for attuning to the local instantiations of capital's expanding frontiers – where its differential impacts are felt and negotiated strongly.

Ultimately, Jameson's conception of culture as a historical form offers a dialectical model for demystifying the imperial logic embedded within the operations of computational capital in Beller's terms, which stresses the imbricated histories of capital and computation. For Beller, race, gender, and media are co-emergent historical formations within the development of global capitalism with its material and epistemological roots in colonialism and modernity (3). It is on account of this 'already integral' status of imperial logic that I identify computational media as an imperial apparatus that enacts the matrix of valuation, to use Beller's terms, by tracking and weighting factors of whiteness, masculinity, citizenship, and geopolitics. In the face of computational media's erasure of the immediate history of its emergence as such, Jameson's mode of interpretation could help us to reveal what it obscures while functioning.

Revisiting Cognitive Mapping

Jameson's notion of cognitive mapping refers to an aesthetic that enables individuals and collectivities to render their position in a capitalist world-system and its historicity intelligible.[3] In Jameson's framework, the term is closely tied to the historical condition of late capitalism "in which the truth of our social life as a whole – in [György] Lukács' terms, as a totality – is increasingly irreconcilable with the possibilities of aesthetic expression or articulation available to us" ("Class and Allegory" 54). Jameson combines Kevin Lynch's empirical problems of city space with Louis Althusser's Lacanian redefinition of ideology as "'the representation of the subject's Imaginary relationship to his or her Real conditions of existence'" ("Cognitive Mapping" 353).[4] Jameson's dialectical model of cognitive mapping complicates the deterministic and totalizing models of representation since it indicates the individual's active negotiation of urban space, varying along the axes of class, race, gender, among others (Toscano and Kinkle 15).

The gap between the social order as a whole and its lived experience, however, has grown with the development of algorithms as extracting, abstracting, and predicting machines, colonizing human cognition, and communication itself. On the one hand, some media scholars rework Jameson's cognitive mapping by interpreting platform aesthetics as a technique of mediation. For example, Alexander Galloway offers a dialectical model of the interface as an effect, while Benjamin Bratton identifies "the Stack" as multiple totalities. Thus, they expand the edges of the interface by attending to the broader systems and histories underlying its production as such rather than grasping it as an aesthetic object at the surface layer.

On the other end, there are media scholars such as Wendy Hui Kyong Chun and Hito Steyerl, who claim that the task of cognitive mapping seems no longer pertinent or viable. For instance, Chun (69) argues that cognitive mapping has become an imperialist tool of network science itself, which seeks to link a local experience to global systems by flattening the subject into a functional category, or a simulated model. Indeed, for Steyerl, Jameson's totality, the sum of social relations, "is not absent, but rampant," having taken other forms such as contact metadata, relational graphs, or trolling campaigns (4).

For Jameson, it is not despite but because of their subsumption by the logic of the market that cultural forms become a frontline of our struggles (*Postmodernism*). Thus, Jameson frames cognitive mapping as an aesthetic problem rather than a prescriptive proposal ("Cognitive Mapping" 347-348). Within the scope of this article, cognitive mapping affirms the possibility of rendering the global network of capital, power, and information intelligible from the vantage point of one's positionality in relation to capital. Yet, it is an ongoing inquiry, affected by the shifting registers of praxis. Feminist and queer thought, as well as postcolonial and critical race studies, demonstrate how the laws of capital are "tendential, as opposed to totalizing" constantly producing, and reworking the hierarchies predicated on race, gender, and geopolitics (Mezzadra and Neilson 38).

Hence, cognitive mapping is about claiming the right to look in Nicholas Mirzoeff's terms, which is never merely about seeing but claiming to a political collectivity that contests the violent transformation of our relationship to history and the current reality (*The Right to Look*). My interpretation of cognitive mapping as countervisuality reconfigures the image of historicity and globality that necessarily involves reworking the imperial modes of visual regimes, knowledge systems, and institutional structures that are always already integral to the capitalist logic but not reducible to it. In response to the ever-expanding scales and complexities of computational capital, artists could attend to its material operations and their performative implementations, thereby remapping the bounds of the psychic and the social, as well as the local and the global. Where capital hits the ground could become a setting in which counter-visual practices flourish, whether in the Global South or its equivalents in Western metropoles.

Cartographies of Digital Colonialism

In late February 2015, a few clips were released on YouTube showing ISIS militants destroying ancient artifacts at the Mosul Museum in Iraq. This was only the most recent incident of destruction done by the jihadist group ISIS (also known as Daesh) across the areas under its control in Iraq and Syria, some of which were well documented and circulated as part of their Hollywood-like propaganda. These videos were followed by the ones of ISIS' destruction of Palmyra's Arch, an 1,800-year-old structure, in Syria later that year. These highly publicized videos perpetuated the Western image of ISIS's concerted attack on civilization and the rising concerns regarding the preservation of the so-called world's cultural heritage. In the following months, international organizations such as the United Nations, state-sponsored agencies, and private firms initiated varied projects for the reconstruction of the ancient artifacts that were destroyed in the region. In less than a year, Palmyra's Arch of Triumph, modeled and printed by 3D technology, was presented to the public in London, the first stop of its world tour, as a symbol of solidarity

with Syrian citizens.[5]

These techno-capitalist spectacles, however, overshadow the U.S. and other Western colonial powers' ongoing violence and strategic interests in the region, which led to the formation of ISIS in the first place. Consequently, the political and historical narratives get stuck between simplistic binary readings, dominated by the rhetoric of us versus them, whereas the functioning of global capital relies on more complex structures of capital, power, and violence. In response, the artist, writer, and educator, Morehshin Allahyari, born and raised in Iran, and based in the U.S. for more than a decade, adopts 3D technology to develop "physical tactics for contesting digital colonialism."[6] Allahyari defines digital colonialism as "the tendency for information technologies to be deployed in ways that reproduce colonial power relations" ("Digital Colonialism"). In Allahyari's terms, If ISIS claims these objects by destroying them, and techno-capitalists reclaim them by replicating them, she offers a third way, restituting power and ownership of the dispossessed communities.[7]

With the series Material Speculation: ISIS (2015-2016), Allahyari reconstructed a dozen of centuries-old original artifacts (statues from the Roman period city of Hatra and Assyrian artifacts from Nineveh) that were destroyed by ISIS at the Mosul Museum in 2015. For 3D modeling, Allahyari needed still images to reconstruct those artifacts but there were not enough data to start with. These artifacts are already a part of looted archives and obscured histories. So, she needed to design those models from scratch based on the limited, and sometimes inconsistent data that could be gathered regarding the histories and material qualities of these artifacts. To this end, she collaborated with historians, archeologists, and museum staff for extensive research.

As we see in the figure of King Uthal,

Figure 1: King Uthal, *Material Speculation: ISIS* (2015-2016), Morehshin Allahyari. Image courtesy the artist. http://www.morehshin.com/material-speculation-isis/

she designed replicas as time capsules for the future with a flash drive or a memory card protected inside (Figure 1). Those cards preserve gathered images, maps, and videos about those sites from the time before their destruction. Allahyari released the digital files related to the first of the models, King Uthal, so that others could download and print their versions, which created an archive scattered around the world. Allahyari still seeks an institutional archive for the rest of the replicas in the Middle East to support cultural commons based in the region.

In this sense, Allahyari's use of 3D technology not only repairs the archive but also generates a cognitive mapping that connects the convoluted geographies and systems (monetary, technological, or symbolic) through which petrocapitalism operates. Thus, she expands from the individual

artifact or technology to the broader systems within which they are embedded, thereby re-narrating their historicity as such. Most of the destroyed ancient artifacts in Syria and Iraq were smuggled by ISIS to finance its militant operations via Turkey, the United Arab Emirates, and Israel among others, to the Western countries (Westcott 30-39); which is to say, those artifacts soon will appear in private collections in the western world.

3D technology becomes the camera's shutter, in Ariella Aïsha Azoulay's terms, which acts "like a verdict—a very limited portion of information is captured, framed, and made appropriable by those who become its rights holders" (23). The imperial divisions and rights are materialized in institutions (e.g., archives, museums), captured by key political terms (e.g., sovereignty, democracy), and embedded within practices (e.g., preservation, study) that reproduce the continuing violence of the forced dissociation between people and objects. The fiction of Western progress perpetuates itself in the faces of its recurring crises while resting on the very erasure of the histories of others.

The replica of Palmyra's Arch of Triumph, reconstructed by Oxford University's Institute of Digital Archeology, reveals imperial formations at a regional scale as well. For instance, the Dubai Future Foundation, one of its main funding bodies, is currently building the Museum of Future in Dubai. The museum has one of the most technically advanced buildings in the world, partially 3D printed, while featuring a unique design with Arabic calligraphy on its exterior (Figure 2). The architectural spectacle of the museum reflects Dubai's goal of becoming a global hub for sustainable futures, as part of the UAE's strategical plans for positioning themselves within a fast-changing international order.

In contrast to the high-tech, post-oil spectacles of Dubai, Allahyari transforms plastic, the most commonly used raw material

Figure 2: The construction site of the Museum of Future in Dubai. The photo was taken by the author on March 20th, 2019..

for 3D printing, into a counter-narrative tool. Plastic's imbrication with computational media tackles the relationship between the extraction of geological layers of the earth (oil) and spectacles of Gulf Futurism that petrocapitalism thrives on. Galloway coins the term "intraface" to underline the implicit presence of the outside within the aesthetic form of the interface, referring to the larger historical material context in which it is situated (53). Likewise, the strength of Allahyari's work is her attentiveness to the historicity of the medium, its situatedness within the material and discursive systems that shape its production and reception as such.

Counter-Futurism as Cognitive Mapping

First coined by the artists Fatima Al Qadiri and Sophia Al-Maria, the term Gulf Futurism underscores the contradictions inherent in the accelerated urban development in the Arabian Gulf, fueled by the 1950s and '60s oil boom, and continued with the neoliberal turn. Indeed, Gulf Futurism has emerged within the shifting registers of geopolitical constellations and sociotechnical imaginaries that

are evident, as Chad Elias describes, in the mixture of "desert city planning, hypermodern infrastructure, environmental collapse, premodern tribalism, and globalized cultural kitsch" (172). While facing post-oil futures, the UAE's development plans adopt a newer emphasis on sustainable futures, joining a growing trend in the aftermath of the 2008 global financial crisis. The repetitive emphasis on transforming challenges of climate change into economic opportunities by investing in science and technology reflects the dominance of what Orit Halpern et al. call "smartness mandate," strongly shaped by the trajectories of computation, urban planning, and crisis. Despite its popularity as such, smartness mandate does not aim at a future that is 'better' but at a smart infrastructure that can absorb constant shocks while maintaining the functionality of capitalist operations (Halpern et al. 121). In contrast to the polished projections of smart futures, however, counter-futurisms arising from the Middle East could perform "a link across very diverse contexts of political struggles where many of them have to do with these themes of race, territory and contested histories" (Parikka 50).

Following a similar path, a Beirut-based artist and writer with a background in architecture, Bassem Saad presents a navigable online virtual space *All Cared for by Chains and Loops* (2019)[8] that sheds light upon the racialized patterns of labor, care, and waste. The dwelling space is that of a paranoid queer narrator, who is concerned about the presence of a localized emergent intelligence that initiates infrastructural projects that are detrimental to biological health. Saad's appropriation of 3D imaging technologies, capturing the actual site and redesigning it in 3D literally 'recycles' Beirut, thereby reclaiming a digital medium which is often adopted by state offices or commercial firms for generating the spectacles of smart futures.

Saad's virtual landscape depicts one of the most polluted neighborhoods of Beirut around the port, the expanding dumpsites and suburbs of the city that host the economically and socially marginalized communities. Historically situated, Lebanon's garbage crisis exposed varied patronages underlying the neoliberal trajectories of the country, which have led to the high levels of economic and political instability as well as urban inequality. Lebanon's post-civil war economy is marked by its integration into Gulf rentierism through banking and real estate in the 1990s, which benefited rentier capitalists at the top, created a precarious middle class, and perpetuated poverty with the ever-growing symptoms of public debt and currency crisis. Therefore, the explanations that focus solely on the conception of sectarian "weak state" neglect the crucial importance of Lebanon's dependence on Gulf rentierism (Bauman 62).

In the face of slow violence in Rob Nixon's terms and unreliable mechanisms of the neoliberal state, the character carries out specific life-preserving rituals and objects. For instance, in Saad's fictional world, unwrapped faces and skin textures, without having been mapped onto a 3D object yet, act as talismanic garments that protect the character from the negative impacts of the toxic environment (Figure 3). Similarly, transparent bodies held together by the spine-protecting medical belt are transposed with the grey city in the background which is falling apart as much as the bodies inhabiting it. These bodily forms expose the limits of the enclosure of an organism, as one's body gets mixed with the toxic environment that keeps leaking. Thus, Saad's intervention does not only bring back the thickness of bodies in the face of flattening abstraction of algorithmic media but connect those bodies to larger processes they are part of. In other words, Saad generates an aesthetic that links cellular and transnational scales.

Figure 3: A screenshot from Bassem Saad's *All Cared for by Chains and Loops* (2019). Image courtesy of artist: http://www.bassemsaad.com/systemcare

Figure 4: Still from Bassem Saad's *All Cared for by Chains and Loops* (2019). Image courtesy the artist: http://www.bassemsaad.com/systemcare

Saad's work becomes an act of cognitive mapping, as it maps out a global supply chain that is not only a North-to-South but also a South-to-South chain. Saad amplifies the entangled relationship between the racialized patterns of devalued labor and the unevenly distributed impacts of environmental degradation in the region ("A Calamitous Node"). On the one hand, the spreading toxicity in Beirut with the absence of required public services contributes to the increasing need for private care, including domestic care provided by non-citizen labor. These workers, mostly women arriving from South/Southeast Asia and Africa via the exploitative sponsorship system (also known as the kafala system), face the most intimate form of structural racism. On the other hand, the glowing city-island of 'Dubai Healthcare City,' underlines the growing popularity of health tourism in the UAE, which again relies on non-citizen labor in the sectors of construction and service.

The environmental impacts of computational media disproportionately affected developing nations and indigenous populations in a manner that Sean Cubitt characterizes as a "continuation of coloniality by other means" (150). This condition creates, for Nixon, a representational problem as it raises the question of "how to devise arresting stories, images, and symbols adequate to the pervasive but elusive violence of delayed effects and invisible harms" (3). Consequently, Nixon connects the aesthetic problem of slow violence to the environmentalism that often only the poor, the most vulnerable can see – like Saad's fictional character.

Accordingly, the disuse of media also preys on the same politics of invisibility. The most vulnerable populations of Beirut reside alongside the city's dumpsites, who are already marginalized within Lebanon's sectarian structures of social and spatial organization. In return, Blake Atwood raises the question of what happens to these neighborhoods when they become "the dumping ground for tons of trash, including waste from the very media devices that promise to challenge sectarian politics" (60). Thus, if we want to tell a story of media use in urban struggles, these populations are also part of the story we tell since media are material as much as our conditions are (Atwood 65).

Saad's virtual scenery of Beirut contests the ideals of the smart city as a form of cybernetic urbanism, which imposes its spatial-temporal logic aligned with the one of capital. Instead, Saad shifts our gaze toward how data is distributed within a varied ecology of urban sites and subjects who interact with it in multiple, mostly conflicting ways. In this regard, Monika Halkort encourages us to critically examine the role of datafication in materializing objects, environments, and bodies "into historically situated measure-value relations that both enable and constrain possibilities for existence within the registers of market and state" (321). For example, her analysis of the Palestinian refugee camps, or the irregular migration in the Mediterranean Sea, grasps the complexity of data relations on the ground at the intersection of shifting registers of rationality, aesthetic regimes, and asymmetries of power.

Drawing upon Diana Taylor's idea of repertoire, Shannon Mattern puts an emphasis on the relevance of ambient and immanent kind of data, especially for developing nations, indigenous cultures, and marginalized populations. Vital urban intelligences survive within bodies, minds, and communities across time, as opposed to the accelerated speed of financial markets and news cycles. For example, Saad included sound recordings within the virtual space from the interviews he conducted with two local figures involved in waste and care economies, respectively (Figure 4). The Kafala system, implemented in the GCC countries, Lebanon, and Jordan,

is regarded as a system of modern-day slavery (Kathiravelu 14). Low-waged migrant workers are denied most of their labor and civil rights, and thus, systemically rendered vulnerable to varied kinds of exploitation and abuse. They vanish in the hands of employers and recruiting agencies as much as in the background of architectural spectacles and publicity efforts.

Consequently, Saad's work is better situated along with other countervisual practices arising from the streets of Beirut, especially since 2015, where people continue protesting the garbage crisis, the banking system, and the kafala system. During the country-wide anti-government protests that have taken place since October 2019, people chant for the resignation of the sectarian political class and the abolition of the kafala system, thereby targeting the wider class hierarchies altogether. The sectarian system being opposed on the streets is inherently tied to the same racist structures that oppress marginalized communities, most notably foreign domestic workers and refugees, and the same patriarchal structures that oppress women and LGBTQ+ (Ayoub).

By extrapolating contemporary economic, ecological, and political concerns into a post-apocalyptic future, Saad's work juxtaposes utopic and dystopic tendencies to bear on the present moment by exemplifying cycles of care and violence across individual and collective registers. Saad's work recalls Donna Haraway's idea of "staying with the trouble," probing the possibilities of life amid capitalist ruins and collaborative survivals in Anna Tsing's terms (37-38). The logic of resilience, however, is operative to the functioning of global capital itself, as smartness mandate demonstrates (Halpern). Ultimately, Saad's work moves towards this very question of what it means to survive in the presence of apocalyptic futures and to seek shelter that is only unevenly distributed.[9]

Conclusion

The Middle East is a fruitful setting for examining contemporary frontiers of capitalism that have operationalized computational media as an imperial apparatus. The global network of military and financial systems cannot be thought in isolation from the ongoing investments in war, oil, energy, security, real estate, arts, and high-tech industry taking place in the region all at once. Thus, claiming the right to imagine alternative futures is closely tied to the act of bringing back the historicity of those operations and attuning to the totality they are actively part of in the present. This dialectical move demonstrates the entangled relationship of aesthetics and politics within capitalist operations, whose obscured historicity reveals the fact that they are neither given nor inevitable.

The arguments regarding the capitalization of the general intellect (which also involves our capacity to imagine alternatives for capitalism) usually end up claiming that our thoughts, affects, desires, and futures are already captured by capital by the means of computational and financial systems. Yet, I encourage a media theoretical inquiry that acknowledges and learns from the ongoing urban struggles across the Global North/South divide, from those who do not have a privilege to stop believing in the future, and even becoming generative in the condition of decay of which we are all unevenly a part of. In the face of state-sanctioned violence, financial crisis, and ecological/urban collapse, artists could rework the bounds of materiality and imagination, thereby probing locally established universalities in their praxis.

There is no privileged position or method of cognitive mapping, which ultimately corresponds to an active negotiation of urban space. We need to trace resonances across the urban struggles

and radical futures arising from the Middle East along with "messy practice rather than cleanly defined theory" (Mirzoeff "Visualizing the Anthropocene" 229). Cognitive mapping affirms an aesthetic that does not exist yet, not because it is impossible but, rather, it cannot be encapsulated in a formula since it is always already in the process of making on the streets.

Notes

[1] See Mirzoeff, Nicholas. "Global Counterinsurgency and the Crisis of Visuality." *The Right to Look: A Counterhistory of Visuality*, by Nicholas Mirzoeff. Duke University Press, 2011, pp. 277-310. See also Weizman, Eyal. *Hollow Land: Israel's Architecture of Occupation*. Verso, 2007.

[2] See Mezzadra, Sandro & Brett Neilson, "On the Multiple Frontiers of Extraction: Excavating Contemporary Capitalism," *Cultural Studies*, 2017, pp. 185-204. https://doi.org/10.1080/09502386.2017.1303425

[3] Cognitive mapping has been a significant part of Jameson's entire critical endeavor since the late 1980s, coupled with his other renowned concepts such as political unconscious, utopia, and geopolitical aesthetic.

[4] Here, Jameson cites: Louis Althusser, "Ideological State Apparatuses," in *Lenin and Philosophy*. Monthly Review Press, 1972.

[5] See http://digitalarchaeology.org.uk/media.

[6] See Morehshin Allahyari's performance lecture, commissioned and co-presented by New Museum affiliate Rhizome, titled *Physical Tactics for Digital Colonialism*, 28 February 2019. https://www.newmuseum.org/exhibitions/view/morehshin-allahyari-physical-tactics-for-digital-colonialism

[7] See Allahyari's talk, *Digital Colonialism, Re-figuring, and Monstrosity* at the School of Art and Design, University of Michigan, Fall 2017: https://www.youtube.com/watch?v=HcK9K4Yty74

[8] The navigable online virtual space was developed in the *Planetary Glitch* web residency of Akademie Schloss Solitude and ZKM Karlsruhe, curated by Mary Maggic.

[9] See Saad, Bassem, "No Entropy: Cassandra 2020." *Unbag* Fall 2019. https://unbag.net/in-tension/no-entropy-cassandra-2020

Works cited

Al-Qadiri, Fatima and Sophia Al-Maria. "Al-Qadiri, Fatima & Sophia Al-Maria on Gulf Futurism," November 14, 2012, https://www.dazeddigital.com/music/article/15037/1/al-qadiri-al-maria-on-gulf-futurism

Allahyari, Morehshin. "Material Speculation: ISIS 2015-2016." *Net Art Anthology*, 2019. https://anthology.rhizome.org/material-speculation-isis

____. "Digital Colonialism." 2016, http://www.morehshin.com/digital-colonialism-2016-2019/

Aouragh, Miriyam, and Paula Chakravartty. "Infrastructures of Empire: Towards a Critical Geopolitics of Media and Information Studies." *Media, Culture & Society*, vol. 38, no. 4, 2016, pp. 559-75. SAGE, doi:10.1177/0163443716643007

Atwood, Blake. "A City by the Sea: Uncovering Beirut's Media Waste." *Communication Culture & Critique*, no. 12, 2019, pp. 53-71. doi:10.1093/ccc/tcz011

Ayoub, Joey. "The Lebanese revolution must abolish the kafala system." *Al-Jazeera*, November 14, 2019. https://www.aljazeera.com/indepth/opinion/lebanese-revolution-abolish-kafala-system-191114115435950.html

Azoulay, Ariella Aïsha. *Potential History: Unlearning Imperialism*. Verso, 2019.

Bauman, Hennes. "The Causes, Nature, and Effect of the Current Crisis of Lebanese Capitalism." *Nationalism and Ethnic Politics*, vol. 25, no. 1, 2019, pp. 61-77. doi:10.1080/13537113.2019.1565178

Beller, Jonathan. *The Message is Murder: Substrates of Computational Capital*. Pluto Press, 2018.

Bratton, Benjamin. *The Stack: On Software and Sovereignty*. MIT Press, 2016.

Chun, Wendy. "Queering Homophily." *Pattern Discrimination*, edited by Clemens Apprich et al., University of Minnesota, 2019, pp. 59-98.

Cubitt, Sean. *Finite Media: Environmental Implications of Digital Technologies*. Duke University Press, 2017.

Elias, Chad. *Posthumous Images: Contemporary Art and Memory Politics in Post-Civil War Lebanon*. Duke University Press, 2018.

Galloway, Alexander. *The Interface Effect*. Pluto Press, 2012.

Halkort, Monika. "Decolonizing Data Relations: On the Moral Economy of Data Sharing in Palestinian Refugee Camps," *Canadian Journal of Communication*, no. 44, 2019, pp. 317-329. doi:10.22230/cjc.2019v44n3a3457

Halpern, Orit. "Hopeful Resilience," *E-flux Architecture*, Special Issue: Accumulation 11-13, April 19, 2017. https://www.e-flux.com/architecture/accumulation/96421/hopeful-resilience/

____., et al., "The Smartness Mandate: Notes toward a Critique," *Grey Room*, no. 68 (Summer 2017), pp. 106-129. http://www.greyroom.org/issues/68/72/the-smartness-mandate-notes-toward-a-critique/. doi:10.1162/GREYa00221

Hanieh, Adam. *Capitalism and Class in the Gulf Arab States*. Palgrave Macmillan, 2011.

____. *Money, Markets, and Monarchies: The Gulf Cooperation Council and the Political Economy of the Contemporary Middle East*. Cambridge University Press, 2018.

Haraway, Donna. *Staying with the Trouble: Making Kin in the Chthulucene*. Duke University Press, 2016.

Jameson, Fredric. "Cognitive Mapping." *Marxism and the Interpretation of Culture*, edited by Cary Nelson and Lawrence Grossberg, University of Illinois Press, 1988, pp. 347–60.

____. *Postmodernism, or, The Cultural Logic of Late Capitalism*. Duke University Press, 1991.

____. "Class and Allegory in Contemporary Mass Culture: Dog Day Afternoon as a Political Film." *Signatures of the Visible*, by Fredric Jameson. Routledge, 1992, pp. 35-54.

Kathiravelu, Laavanya. *Migrant Dubai: Low Wage Workers and the Construction of a Global City*. Palgrave Macmillian, 2016.

Mezzadra, Sandro, and Brett Neilson. *The Politics of Operations: Excavating Contemporary Capitalism*. Duke University Press, 2019.

Mirzoeff, Nicholas. *The Right to Look: A Counterhistory of Visuality*. Duke University Press, 2011.

____. "Visualizing the Anthropocene." *Public Culture*, vol. 26, no. 2, 2014, pp. 213-232.

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Harvard University Press, 2011.

Toscano, Alberto, and Jeff Kinkle. *Cartographies of the Absolute*. Zero Books, 2015.

Parikka, Jussi. 2017. "Middle East and Other Futurisms: Imaginary Temporalities in Contemporary Art and Visual Culture." *Culture, Theory and Critique*, vol. 59, no. 1, 2017, pp. 40-58. doi:10.1080/14735784.2017.1410439

Saad, Bassem. "A Calamitous Node in a Planetary Chain: Interview with Bassem Saad," *Issue No 0 Digital Culture, Theory & Art*, March 07 2019, https://schloss-post.com/a-calamitous-node-in-a-planetary-chain/

Shannon Mattern, "A City Is Not a Computer," *Places Journal*, February 2017. doi:10.22269/170207

Steyerl, Hito. "A Sea of Data: Pattern Recognition and Corporate Animism." *Pattern Discrimination*, edited by Clemens Apprich et al., University of Minnesota Press/Meson Press, 2019, pp. 1-22. doi: 10.14619/1457

Westcott, Tom. "Destruction of Theft? Islamic State, Iraqi Antiquities and Organized Crime." March 2020. https://globalinitiative.net/wp-content/uploads/2020/03/Destruction-or-theft-Islamic-State-Iraqi-antiquities-and-organized-crime.pdf

Ziadah, Rafeef. "Circulating Power: Humanitarian Logistics, Militarism, and the United Arab Emirates." *Antipode*, vol. 51, no. 5, 2019, pp. 1684-1702. doi:10.1111/anti.12547

Juan Pablo Pacheco Bejarano

DIGITAL HUNTERS: TECHNO-TERRITORIES IN THE AGE OF COMPUTATIONAL SURVEILLANCE

Abstract

As the infrastructure of the internet continues to expand, networked computational surveillance becomes an essential practice of territorial and biopolitical control. The feedback loop between information technologies and global structures of power creates new territorial and biopolitical regimes that sanction the mobility of people and information across Earth. These new 'techno-territories' lead to the emergence of new agents of power, who weave virtual and material worlds together in order to exercise control over these new spaces and the bodies that flow through them. This article discusses the emergence of 'digital hunters' as both subjects and objects of power through a discursive analysis of *AZ: move and get shot* (2011-2014) and *The Virtual Watchers* (2016), two artworks by Joana Moll based on research into crowdsourced surveillance systems at the US/Mexico border. Through a discussion of these projects I trace the emergence of digital hunting as a new practice of territorial control through networked images, as citizens are militarized through participatory architectures of surveillance and social media.

APRJA Volume 9, Issue 1, 2020
ISSN 2245-7755

Figure 1: The six independent videos that compose the online piece *AZ: move and get shot* by Joana Moll. Courtesy of the artist.

Introduction

The flow of information and people across Earth has profoundly shifted as physical and virtual borderlands become more intimately entangled. As global network capitalism continues to expand (Fuchs 110), new geo-political borders are created at the intersection of contested geographic delimitations and digital interactive interfaces. These intersectional spaces—which I refer to as 'techno-territories'—are defined by an interplay between participation and exclusion as mutually constitutive processes. Internet users participate in increasingly interactive platforms, creating global communities of exchange. However, participatory interfaces are simultaneously used to surveil and control the mobility of human actors across new techno-territorial boundaries, controlling the mobility of people at the frontiers of globalism's imagined communities. The hunt for undesired immigrants in these techno-territories through contemporary electrical networks engenders a new political agent of the information age, which I call the 'digital hunter'.

In order to trace the emergence of digital hunting as a practice of territorial power, this paper discusses two artworks by Joana Moll, which emerge from five years of research into Wireless Border Cams (WBC) and Blue Servo, two crowdsourced surveillance platforms at the US/Mexico border. The first project that Moll developed between 2011 and 2014 was *AZ: move and get shot*, which is based on six online surveillance cameras placed by landowners at the US/Mexico border in Arizona. Triggered by a motion sensor, the cameras captured the movement of human and non-human agents through image sequences that were automatically uploaded to a server and displayed on a dedicated website. Moll developed an algorithm that detected and retrieved every new image uploaded to this platform, in order to automatically assemble them on the AZ project's website. Through the span of four years the algorithm created six independent videos, which show the sequences of images from each one of the six tapped cameras (see fig. 1).

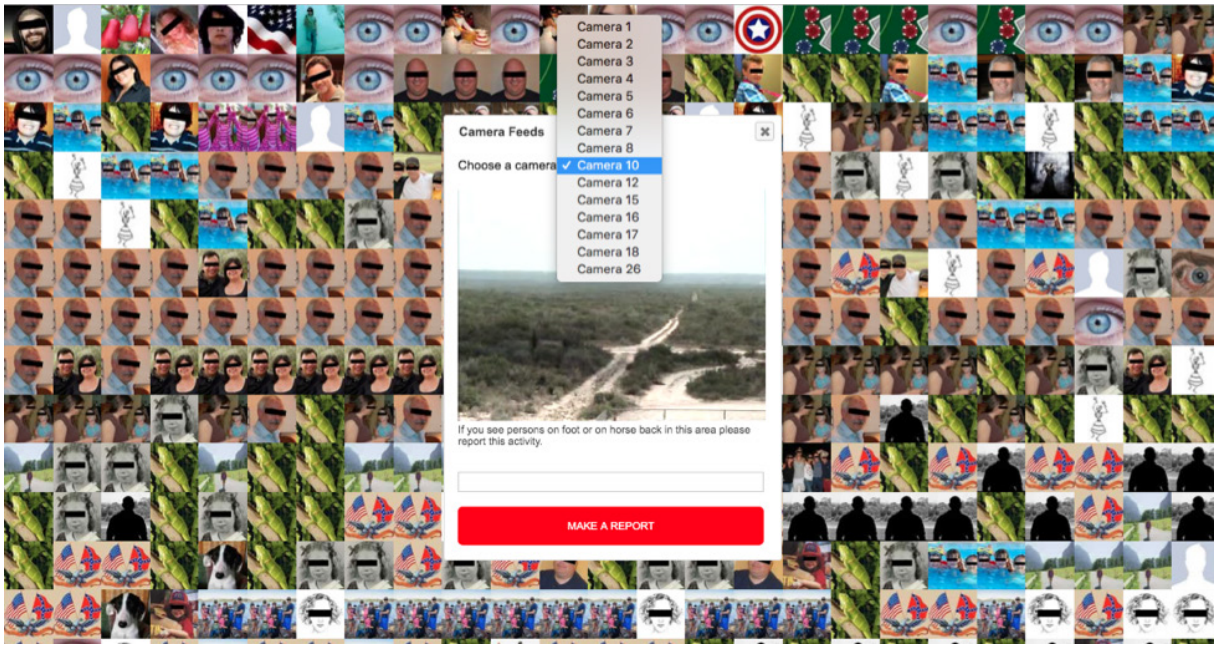


Figure 2: *The Virtual Watchers* by Joana Moll, an online project that shows the chronological history of the Blue Servo Facebook group, and replicates some of the Blue Servo original interface design. Courtesy of the artist.

Moll's second project for analysis, *The Virtual Watchers* (2016), visualizes the interactions between users of a Facebook group created by volunteers at Blue Servo, another online platform to surveil the US/Mexico border. The interface provided 24/7 access to images from a network of 200 cameras and sensors along strategic sites of the borderline, and allowed users to make anonymous reports to border enforcement authorities. Moll's piece consists of an interactive archive of the original conversations on the Facebook group, and some of the original videos and interface design from the Blue Servo website (see fig. 2). By focusing on the use of social media that enhances the control of techno-territories at the US/Mexico border, *The Virtual Watchers* uncovers digital hunting as a community practice fueled by affective social spectacle.

The lives of users who navigate through participatory web interfaces is constructed by the images that they create and use, blurring the line between image and reality (Flusser 10). In this case, US citizens who inhabit the techno-territories offered by WBC and Blue Servo develop new territorial relationships to the US/Mexico border through the images they consume. Even though the intended purpose of these systems is to involve citizens in capturing undocumented immigrants crossing the US/Mexico border, *AZ: move and get shot* reveals that most of the images on these platforms captured the movement of nature and the pace of a changing landscape. This seemingly useless flow of territorial images, however, serves a crucial role: it *creates the border as an image*, constituting the techno-territories inhabited and controlled by digital hunters.

As digital hunters exert biopolitical control over emerging techno-territories, they interact through social media platforms in order to sustain their communities. At the same time that digital hunters create their online communities aimed at catching immigrants, Facebook trackers hunt down hunters' personal data in order to sell it to the best bidder (Zuboff 160). Digital hunters are both subjects and objects of power under global network capitalism, caught in a system whose main purpose is to sustain the flow of capital and

information at the expense of unsanctioned bodies and citizen privacy. In a sense it could be argued that digital hunting is a practice of power that lies at the core of contemporary information capitalism.

Borders and mobility in a time of techno-territorial capitalism

Global capitalism is characterized by a two-fold relation to mobility across international borders: while frontiers are enforced in order to restrict the mobility of unsanctioned bodies, the very same spaces are opened to the flows of capital and data (Hyndman 316; Martin 356). As digital data becomes one of the world's most valuable assets, the material infrastructure of the internet through which this new gold flows is mostly granted safe passage across borders. The virtual worlds created by the circulation of data coalesce with the material borders that the internet's infrastructure permeates, creating new biopolitical regimes of mobility across the techno-territories I refer to. The internet allows information to travel as a commodity while at the same time it allows digital hunters to frustrate the mobility of people deemed as undesired by global governance systems.

Borders are historical constructs that arise from contested social relations (Paansi 23), creating the condition of impenetrability that defines the sovereignty of states and subjects, both human and non-human (Latour 311). In this sense, the US/Mexico border is a shifting meaning-making space that emerges from a history of colonial dispossession and war; white US nationalists see it as the ultimate boundary of their imagined homeland, and immigrants experience it as the passage to a better reality that is, in turn, violently denied. These tensions are exacerbated by the omnipresence of cameras connected to global information networks, as governance systems upgrade their control mechanisms towards fields of vision and power that were not previously available (Bratton 8). Even though crowdsourced surveillance technologies did not create immigrants and nature as objects of power, the interactive interfaces uncovered by Moll's work open new biopolitical possibilities to control the flow of people across boundaries at a distance. US citizens/users who hunt for images of immigrants through these platforms, are granted the power of seeing like a state: a disembodied and decentralized governance infrastructure that sanctions the flow of bodies across geopolitical boundaries.

The border as image and as physical space is the techno-territory occupied both by immigrants and digital hunters, albeit in dissimilar ways. The concept of techno-territories that I suggest in this paper relies on the notion of territoriality as a process that emerges from coding and decoding the interactions of subjects and objects with a given space (Deleuze and Guattari 320), mediated by economic and extra-economic logistics, sociopolitical institutions, and technologies (Ó Thuatail 90). Contemporary territories are increasingly defined by new technologies of vision, which lead image and world to become convoluted versions of each other (Steyerl). Computer technologies are increasingly blurring the boundaries between Earth and its simulations, as the possibility for seeing and controlling a particular territory does not depend anymore upon proximity. Techno-territories are, therefore, natural ecosystems cut through by geopolitical dynamics and intersected by contemporary computer infrastructures and interactive interfaces.

The geopolitical dynamics that emerge from the current rise of far-right governments across the world increase global tensions

over contested borders. In the case of the US/Mexico, the border wall has become one of the foundational images of Trump's conservative agenda fueled by xenophobic and racist rhetoric. In order to cater and exacerbate its follower's anti-immigration views, Trump's government insists on creating a live-broadcasting service of the construction of the new US/Mexico border wall.[1] What is key for Trump's administration is not the efficacy of the physical wall—heavily contested by recent reports[2]—but the border wall as a collective image. The wall live-broadcasting initiative by Trump's government reveals the importance of networked architectures of vision as mechanisms to generate the wall *as an image*, which is, arguably, more efficient than the wall itself in exerting territorial control.

Digital hunters spend hours looking at images from this techno-border between the US and Mexico, in search for the faintest trace of undocumented immigration. A series of interactive buttons allow them to report and connect to the border patrol authorities, usually leading to interdictions at the sites that are surveilled. However, beyond the real efficacy of these platforms in stopping undocumented immigration, they seem most efficient at keeping users watching the border (Moll 160). The effectiveness of these surveillance images does not lie with the number of immigrants that users are able to catch, but in the creation of digital hunters as a remote paramilitary force that patrols the borders of informational capitalism. Citizens are seduced into a militarized relation to the state, as they are turned into digital hunters in order to fill in a power vacuum opened by contemporary information systems.

The US/Mexico borderland is, thus, a complex techno-territorial system composed of intersecting layers of natural, technological, and sociopolitical flows. The Facebook group exposed by Moll's *The Virtual Watchers* reveals how social media is a tool effectively used for techno-territorial control, as it allows digital hunters to create the online communities that consolidate their xenophobic tendencies. Moll's project shows that participation and domination, typically described as two distinct modes of networked social structures (Fuchs 343), are mutually constitutive, since digital hunters dominate the flow of sanctioned bodies at the border through means of virtual participation. The crowdsourced border surveillance platforms become pedagogical tools for new far-right governments, which render the border as a stable visual regime.

Hunted images

The services provided by WBC, which are exposed by Moll's work, uncover a profound relationship between hunting and image technologies. The cameras used by the landowners in their private properties are also distributed by WBC, whose website currently redirects to Buck Eye Cam (BEC), a surveillance camera seller that mostly targets border security and hunting industries.[3] The same networked image technologies used to hunt animals for sport are used to hunt immigrants crossing the border. As the processes of looking and capturing become increasingly entangled both in symbolical and material dimensions, the relationship between image-making technologies and biopolitical control is sharpened.

Photographic language has multiple roots in hunting terminology, as the rifle's telescopic aiming sight was replaced by the camera's viewfinder (Sontag 11). Susan Sontag described this transition at the African safari, as photographers shifted from animal-trophies to image-trophies, charging film cartridges instead of guns, and shooting

pictures instead of bullets. The bond between the act of killing and the act of shooting a picture grows even deeper at the moment in which digital images travel at unprecedented speeds across a global infrastructure of interconnected screens. The relationship between hunting and images is exacerbated in the age of contemporary surveillance, where being recorded threatens the very existence of the image's subject. The cameras at the US/Mexico border shoot immigrants and non-human actors as they cross the borderland, reverting the camera back to its principal function: to freeze life through shooting the desired subject. In this case, quite literally.

Yet, human hunting is not a practice that originates in computational surveillance technologies. From lynching to headhunting, bounty hunters, and cowboy hunting of indigenous people in colonial regimes, undesired people and non-humans are all piled up in the same underclass by ruling colonial systems. Hunting animals as a sport, as well as hunting the Other, has been a practice of colonial anthropocentric power throughout history. As a colonial practice, hunting is upgraded through new technical capabilities of image-making and information sharing, as digital hunters sanction the mobility of bodies deemed as undesired by dominant geopolitical actors. The anti-immigration rhetoric of governments such as Trump's fuels hunting as a biopolitical force of territorial control, which is now assisted by faster and expanding digital networks of global information.

Mostly composed of low angles, the images in *AZ: move and get shot* show a point of view akin to a camouflaged animal waiting to catch its prey. Even though the movements of a photographer lying in wait are very similar to a predator stalking its prey (Flusser 33), digital hunters do not stalk their prey on site since their hunting grounds exist within a network of multiple visual fields. Digital hunters are not the operators of the photographic apparatus—which is automated by a sensor— but are the consumers of these images on the other side of the screen, miles away from their immediate field of vision. Digital hunters, therefore, perform a double camouflage: their surveillance cameras are hidden on the physical territory, and their bodies are entirely displaced from the scene through the use of the internet's network.

This surveillance infrastructure becomes an invisibility cloak, turning spectacle into an effective act of power. The predatory act of taking a picture (Sontag 10), transitions from the symbolical to the real through the possibilities opened by global networks of information. The internet deterritorializes digital hunters from their immediate localities, and reterritorializes them into the border as spectators through networked systems of vision. In this scenario, the state's territorial sovereignty is partially transferred to digital hunters as subjects of power of the techno-territories they inhabit. In the age of techno-territorial sovereignty, watching and hunting become convoluted processes through systems of digital surveillance.

Digital hunting: between desire and control

The virtual watchers exposed by Moll's project are phantasmagoric and disembodied hunters capable of exercising control through the act of looking—and eventually reporting. Even if the images are not taken by them, digital hunters actualize their meaning through making use of them. *The Virtual Watchers* shows the number of interactive features in the Blue Servo website, through which users could switch views from multiple cameras and click on a button to make reports. Most of the comments evidenced in *The Virtual Watchers* are based on faint impressions of

movement: participants are usually not sure if what they saw was an immigrant, an officer, an animal, etc. The point is that they see something, report it, and eventually become the initiators of a detention; only then can they claim their image-trophy.

As citizens are militarized through this architecture of vision and interactivity, the territorial power of governing institutions exponentially grows. The state offloads its securitization by means of crowdsourcing, militarizing civilians through systems of free labor. Moll claims that Blue Servo's users initiated 5,331 interdictions which represent approximately one million hours of free labor for border authorities (Moll 158). Through the use of interactive platforms and of social media, the community of digital hunters that emerged from Blue Servo created a decentralized force fed by the desire of participating in the securitization of their country. Social media paired with crowdsourced surveillance systems become a much more efficient and cheap way to ensure territorial control than traditional patrolling.

Digital hunters often complain when they are not able to see the detention that results from their reports. After disclosing to the Facebook group that she had been watching for over seven hours at Blue Servo's interface, one of the users felt "disgusted" because she did not get to see the interdiction that resulted from her report. She writes, "…why should I continue to watch and report when we don't get to see at least some of the outcome?". The anxiety expressed by this user emerges from the inability to claim the ultimate image-trophy of digital hunting—the evidence of the user's power. Under this scenario, surveillance and spectacle become convoluted into the very same process, and biopolitical power is turned into an interactive videogame.

These participatory platforms use the lure of interactivity in order to produce a border that resembles a video game, enhanced by the affection in which social media sites are based upon. In addition to Blue Servo's interface design, the Facebook group enabled digital hunters to create affective bonds between themselves, as a community of little brothers—as opposed to a single Big Brother (Guzik 6)—fully dedicated to the protection of their territorial identity from what they perceive as an immigrant threat. When some of the users manifest disappointment on the Facebook group, others jump in to encourage them to keep watching and helping to securitize the US/Mexico border (see fig. 3). The surveillance complex tapped by Moll enables the creation of a team of immigrant hunters assisted by image-making technologies and social media, invested in the process of controlling the mobility of the undesired other.

As the internet becomes a predominant site for affective interaction, this model of surveillance through participation creeps into every single aspect of life. The god-like vision of digital hunters is mirrored by the vision of social media algorithms, which collect data on user interactivity in order to sell it to the best bidder and feed the vaults of big tech companies (Zuboff 35). Companies such as Facebook use multiple web technologies, such as trackers and GPS locations, in order to surveil their users and sell their data mainly for marketing purposes. The transnational cyber-empires inaugurated by these companies normalize surveillance as an economic and political force. Tech-corporations hunt for user data across the globe, just as digital hunters hunt for images of immigrants at the border. In sum, digital hunting emerges as a key practice at the core of the geopolitical dynamics under surveillance capitalism.

Figure 3: One of the many conversations shown at *The Virtual Watchers*, between a disillusioned digital hunter and another one cheering her up.

Conclusion

The networks inhabited by internet users are both material and imaginative, as the territorial control exerted by digital hunters is fueled by a desire to protect their country from undesired immigrants. The crowdsourced surveillance platforms exposed by Moll's work function both to reinforce the alleged US/Mexico border and to create new realms of territorial sovereignty. Online interactive surveillance at the US/Mexico border creates new techno-territorial domains, as users hunt immigrants through participatory interfaces that allow them to report what they deem as suspicious activity. Networked images that flow through the internet are turned, in this scenario, into the weapons of digital hunters who patrol the borders of their imagined national community.

AZ: move and get shot and *The Virtual Watchers* reveal the creation of the US/Mexico border as an interactive interface through the use of technologies of vision, and foresee the emergence of new fields of power created through participatory surveillance technologies. These two artworks unveil the materiality of the digital revolution, as it deeply alters the processes of territorialization and deterritorialization of the contemporary world. The US/Mexico border becomes an interactive platform that provides users with a telematic agency over the territories they desire to control. Digital hunters emerge as new subjects/objects of surveillance capitalism, as they weave together material and virtual worlds through active practices of power.

Hunting, as an analytical tool, emphasizes the exercise of biopolitical and territorial control through information networks. Surveillance capitalism is based on the idea of a generalized system of data exploitation, where the images and data are stripped

away from the subjects of representation for the sake of profit. However, digital hunting provides a much more accurate understanding of biopolitical power, as it refers to the technologically mediated relation between users and bodies deemed as undesired. Digital hunters become active participants of dominant states of power, controlling the flow of bodies through the US/Mexico border and providing considerable amounts of free labor in the task of surveilling the borderlands. Networked architectures of vision paired with the participatory nature of contemporary informational networks, have the capacity to turn citizen-users into both a military force and an unpaid worker.

Contemporary digital platforms set the stage for multiple types of digital hunters. While some hunters use participatory online platforms to enforce territorial and biopolitical control, other hunters perform critical approaches to the same interfaces. For example, Moll reverses the expected use of the very same digital infrastructures used to surveil the US/Mexico border, revealing the interface itself instead of using it to catch immigrants. In this sense, there is a constant negotiation between users and the online interfaces, mediated by a set of ideologies and intentions that, in this case, separate US nationalists from an artist. Nevertheless, Moll is also a digital hunter in the Facebook group and the surveillance platforms, counter-surveilling the activity of users in order to reveal the power dynamics at play. The difference between multiple types of digital hunting, and their relation to ideology, image-trophies, and territories, would be the subject of further research.

In this paper, I have shown how the digital communities created by digital hunters on social media are, in the end, at the service of Facebook's algorithmic surveillance. The more Facebook communities interact amongst themselves the more information flows into their servers, which is quickly processed by algorithms and sold as data points to the best bidder. This generalized state of surveillance reveals what is at the core of contemporary networked capitalism: an extraterritorial economic and political force assisted by the latest technological advancements. As digital hunters hunt immigrants at the US/Mexico border, Facebook's algorithms hunt down social media user data. The internet, in this sense, becomes an infrastructure that fosters nationalist and xenophobic territorial control while simultaneously allowing digital information to flow as a commodity. Machine, companies, and state collapse into a single force, as new technologies of vision and participatory platforms claim territorial sovereignty.

Notes

[1] In an article for *The Washington Post*, Nick Miroff reports that Jarred Kushner, Trump's son-in-law and senior advisor, is pushing for the creation of the live-broadcasting system of the border wall construction.

[2] Miroff has also reported on the strategies that smugglers are using to saw their way through the new border wall, using simple tools to create a person-sized hole in approximately twenty minutes.

[3] Sean White, one of BEC's owners, maintains a personal blog where he dedicates an entire entry to the use of his company's equipment in the hunting industry.

Works cited

Bratton, Benjamin. *The Stack: On Software and Sovereignty*. MIT Press, 2015.

Deleuze, Gilles and Felix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi, University of Minnesota Press, 1987.

Flusser, Vilém. *Towards a Philosophy of Photography*. Translated by Anthony Mathews, Reaktion Books, 2000.

Fuchs, Christian. *Internet and Society: Social Theory in the Information Age*. Routledge, 2008.

Guzik, Keith. "Surveillance Technologies and States of Security." *Making Things Stick: Surveillance Technologies and Mexico's War on Crime*, University of California Press, 2016, pp. 1-25.

Hyndman, Jennifer. "Mind the gap: bridging feminist and political geography through geopolitics." *Political Geography*, vol. 23, 2004, pp. 307-322, doi:10.1016/j.polgeo.2003.12.014.

Latour, Bruno. "Onus Orbis Terrarum: About a Possible Shift in the Definition of Sovereignty." *Millenium: Journal of International Studies*, vol. 44, no. 3, 2016, pp. 305-320, doi:10.1177/0305829816640608.

Martin, Craig. "Desperate Mobilities: Logistics, Security and the Extra-Logistical Knowledge of 'Appropriation.'" *Geopolitics*, vol. 12, no. 2, 2012, pp. 355-376, doi:10.1080/14650045.2011.562941.

Miroff, Nick. "Smugglers are sawing through new sections of Trump's border wall." *The Washington Post*, 3 November 2019, www.washingtonpost.com/national/smugglers-are-sawing-through-new-sections-of-trumps-border-wall/2019/11/01/25bf8ce0-fa72-11e9-ac8c-8eced29ca6ef_story.html.

____. "White House to use webcams to create live feed of border wall construction." *The Washington Post*, 13 November 2019, www.washingtonpost.com/immigration/white-house-to-use-webcams-to-create-live-feed-of-border-wall-construction/2019/11/12/4014ce26-057a-11ea-a5e2-fccc16fa3576_story.html.

Moll, Joana. "Surveillance through Social Networks along the US-Mexico Border." *Proceedings of the EVA London 2014 on Electronic Visualisation and the Arts*, BCS, London, 2014, pp. 158-161, doi:10.14236/ewic/eva2014.19.

Ó Thuatail, Gearóid. “Political geography III: dealing with deterritorialization.” *Progress in Human Geography*, vol. 22, no. 1, 1998, pp. 81-93, doi:10.1191/030913298673827642.

Paansi, Anssi. “Boundaries in a Globalizing World.” *Handbook of Cultural Geography*, Sage, 2003, pp. 462–72, doi:10.4135/9781848608252.n33.

Sontag, Susan. *On Photography*. Rosetta Books, 2005.

Steyerl, Hito. “Too Much World: Is the Internet Dead?” *E-Flux*, vol. 49, Nov. 2013, https://www.e-flux.com/journal/49/60004/too-much-world-is-the-internet-dead/.

White, Sean. “The Hunting ‘Industry.’” *BUCKEYE CAM*, 2 July 2018, https://buckeyecam.tech/2018/07/02/the-hunting-industry/.

Zuboff, Shoshana. *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. Profile Books, 2019.

Linda Kronman

INTUITION MACHINES: COGNIZERS IN COMPLEX HUMAN-TECHNICAL ASSEMBLAGES

Abstract

The urgency of environmental, security, economic and political crises in the early twenty-first century has propelled the use of machine vision to aid human decision-making. These developments have led to strategies in which functions of human intuitive processing have been externalized to 'vision machines' in the hope of optimized and objective insights. I argue that we should approach these replacements of human nonconscious functions as 'intuition machines.' I apply this approach through a close reading of artworks which expose the hidden labour required to train a machine. These artworks demonstrate how human agency shapes the ways that machines perceive the world and reveal how values and biases are hardcoded into nonconscious cognitive machine vision systems. Thus, my analysis suggests that decisions made by such systems cannot be considered fundamentally objective or true. Nevertheless, artworks also exemplify how externalized intuitive processing can still be helpful as long as we refrain from blindly taking the results as a go-signal to take immediate action.

APRJA Volume 9, Issue 1, 2020
ISSN 2245-7755

Among other global threats, climate change provides an urgency to develop new machine vision systems. In 2018 Will Marshall, CEO of Earth imaging company Planet, announced their new vision of "Queryable Earth" to "index physical change on Earth and make it searchable for all." He claimed that this initiative would "empower people with the insights that drive better decision-making at the speed the world moves" (Marshall). Without this technology, Planet's product architect Chris Holmes is concerned that something important might be missed: "I fear for the world's survival if we are not able to get an accurate pulse, MRI scans, x-ray and sonogram for what is happening." (Planet, *FOSS4G-NA 2018 Keynote: Towards a Queryable Earth - YouTube*) The earth is imagined as a sick human body that can be diagnosed using machine learning models, petabytes of satellite images and other sensory data. It is promised that machine vison will help in making informed decisions for managing the earth's resources. In another example, the company Faception claims that their machine learning technologies can assess a person's character based on a single facial image. Their AI solutions are promised to be key in "making the right decisions about the person right in front of you, or on the video screen" ("FACEPTION | About Us"). Among other things, their computer vision technology is intended to ensure safety by providing predictive screening solutions that enable preventive actions. Thus, it has the potential to supplement or even replace critical law enforcement officers in completing certain tasks. Faception also foresees its software being used to replace humans in other contexts, for example, when assessing job candidates or insurance applicants. Both examples demonstrate the potential for how computer vision and machine learning technologies can improve human decision-making.

Paul Virilio anticipated that 'vision machines' would be capable not only of "recognising the contours of shapes, but also of completely interpreting the visual field" (59). Virilio's insight was influenced by Frank Rosenblatt's Perceptron, "the first operative artificial neural network—grandmother of all the matrices of machine learning" (Pasquinelli 6). The revival of neural networks, enabling machine learning, in combination with access to massive amounts of data provides the means for today's vision machines, thus, we are "delegating the analysis of objective reality to a machine" (Virilio 59).

As machines learn to analyse images and connect them with meaning, they become technical cognizers, in other words actors interpreting data. In her book *Unthought*, N. Katherine Hayles re-thinks the concept of cognition, offering an extended definition which includes biological as well as technical cognizers: "*Cognition is a process that interprets information within contexts that connect it with meaning*" (22; emphasis in the original). Accordingly, cognitive processes take place both in the conscious and the nonconscious. Hayles draws parallels between human and technical nonconscious cognition as they perform similar functions. Contemporary vision machines perform in complex cognitive assemblages in which technical and human cognition weave together. Therefore, it becomes important to understand the interfaces across which nonconscious cognition surfaces to higher-level conscious decision-making.

In this paper I propose that vision machines aiding decision-making are also 'intuition machines.' As I will demonstrate intuition functions as an interface between nonconscious and higher-level conscious processing. Intuitions are also a source for fast decision-making when conscious capacity is limited. Hence, the concept of 'technical intuitions' can be used to understand

entanglements of human-technical cognition in decision-making. However, human and technical intuition are materially different. Human intuition surfaces physically as a gut-feeling whereas technical intuition is expressed as output values. My intention is not to anthropomorphize machines by claiming that machine intuitions are superior or inferior to human intuitions. Rather, by using the term 'intuition machine,' I try to frame to what extent machine vision systems can be seen to "*represent externalizations of human cognitive processes*" (Hayles, *Unthought* 25; emphasis in the original). I will be using the term machine vision in a broad sense, referring to the "registration, analysis and representation of visual data by machines and algorithms" (Rettberg et al. 97) as it is defined in the *Machine Vision in Everyday Life* project in order to analyse broader cultural understandings of machine vision. This definition relates to the concept of machine perception, focusing on methods of computer vision that are applied in machine vision systems.

As intuition machines are making decisions with us and for us it becomes crucial to ask: how do these machines perceive the world? What constitutes the reality of vision machines? I will use artworks (*VFRAME*; *Asunder*; *Hipster Bar*; *Mosaic Virus - Myriad (Tulips)*; *Training Humans*; *ImageNet Roulette*) to exemplify what roles intuition machines play in decision-making. Through my analysis of several artworks that use and reference machine vision, I highlight both the potential and limitations of intuition machines. Several works, for example, challenge the politics of assembling training datasets or collections of labelled images. The images in relation to their given labels are central in how machine vision systems perceive the world. The very function of nonconscious cognition is to filter. Consequently, everything in an image is flattened to an output value, which is linked to a label. Although data has to be classified to be put in use, it quickly becomes problematic when humans are categorised as objects.

Human and Technical Intuition—An Interface Between the Nonconscious and the Conscious

In *Unthought* Hayles describes the similarities between the human and technical nonconscious: "Like human nonconscious cognition, technical cognition processes information faster than consciousness, discerns patterns and draws inferences and, for state-aware systems, processes inputs from subsystems that give information on the system's condition and functioning" (11) Furthermore, conscious thinking is dependent on the nonconscious to filter the input of sensorial stimuli from our environment. As an increasing number of sensors are collecting data from our environments, machine learning models are becoming increasingly important in recognizing patterns, filtering and condensing information. Hence, they operate as what Hayles calls technical cognizers in complex human-technical assemblages. In such assemblages, machine vision is not only the enhancement of the human eye, but an externalization of the neuronal processing capacity of the human brain. Nonconscious processes are externalized to machines to optimize human capacity in finding information in a threatening sea of data. Artificial neural networks inspired by, but not identical to, biological neural networks simulate human nonconscious cognition. Cognitive physiology and sciences have revealed that nonconscious processing in humans is one of the sources for intuition.

Intuition is given different meanings in different contexts. It can be described as understanding something unconsciously, sensing the solution, an inner hunch or a feeling, or nonconscious pattern recognition. Research on intuition describes it as experience-based nonconscious processing that requires pre-existing knowledge (Zander et al.; Lewicki et al.,). As intuitive processing is nonconscious, it is inaccessible by humans. Hence, nonconscious processes have been difficult to investigate as study subjects are not able to explain "how they *learned* all those information-processing algorithms and heuristics that are involved in the cognitive 'software' that is indispensable for their psychological functioning" (Lewicki et al. 796). In a similar manner the nonconscious processes in hidden layers of artificial neural networks are inaccessible to humans. Thus, it is difficult for us to understand what a machine perceives.

In the research field of judgment and decision-making, it has been understood that "intuition means to non-consciously understand environmental patterns and to act according with this first impression without being able to justify it" (Zander et al. 4). However, in this context intuition research has historically been dominated by two conflicting approaches which conceptualize intuition in different ways. The 'heuristics-and-biases' approach emphasizes the imperfection of human intuition and considers that heuristics, limited to intuitive predictions, "sometimes lead to severe and systematic errors" (Kahneman and Tversky 237). The more positive 'fast-and-frugal-heuristics' approach considers intuition to be a valid, even successful, strategy "when time and cognitive capacity is limited in a fuzzy real world" (Zander et al., 4). However, there is considerable agreement that intuition operates in a two-systems framework that consists of the fast, automatic, effortless, associative, and non-flexible nonconscious and the slower, serial, effortful, deliberately controlled, and relatively flexible conscious (Price and Norman). Research on creativity and problem solving, however, offers a third approach: "intuitive feelings are seen as a manifestation of a vital component of consciousness that functions as an interface between the nonconscious and the conscious" (Price and Norman 33). Following this approach intuition is a result of nonconscious processing that as a subjective experience (gut-feeling) provides inaccessible reduced information directly to our consciousness. Likewise, when we externalize nonconscious processes to vision machines, the output in the form of reduced information (e.g. object detection: 89% apple; face recognition: 75% female; or emotion detection: 0.945 happy) can be seen as technical intuitions. Thus, technical intuitions function as an interface between the nonconscious processes in the machine and higher-level human or technical cognizers. In a human, the nonconscious and the conscious are attached to the same body, and intuitions provide a partial connection between them. In contrast technical intuitions function as an interface between technical and human cognizers. Furthermore, in automated decision-making technical intuitions serve as input for higher-level technical cognition.

The Role of Reasonable Doubt in Interpreting Technical Intuitions

Contemporary digital artworks demonstrate that intuition machines can be used to enhance human nonconscious capacities in successful ways. However, technical intuitions need to be met with reasonable

doubt. *VFRAME: Munition Detector* (2017) by artist Adam Harvey is an example how the results of an intuition machine can be used as evidence after a detailed process of cross validation. Exhibited as an artwork, *VFRAME: Munition Detector* is an open source computer vision tool to detect illegal munition in vast amounts of uploaded videos. It exemplifies an intuition machine in which technical intuitions function as an interface between the technical nonconscious and conscious human decision-making. It is also a project that recognizes how both human and technical cognizers operate in uncertainty with a limited amount of information, hence, "interpret ambiguous or conflicting information to arrive at conclusions that are rarely if ever completely certain" (Hayles, *Unthought* 24).

According to *VFRAME*'s website, human resources and capacities to process large amounts of visual data are limited. "Human rights researchers often rely on videos shared online to document war crimes, atrocities, and human rights violations. Manually reviewing these videos is expensive, does not scale, and can cause vicarious trauma. As an increasing number of videos are posted, a new approach is needed to understand these large datasets" (*VFRAME: Visual Forensics and Metadata Extraction*). The old approach was hindered by slow conscious human interpretation that required considerable effort to find relevant video material. Thus, the new approach needed to entail capacities of nonconscious processes: fast, automatic and effortless. The solution, to create an object detection tool, led to the outsourcing of cognitive processing into a machine. A machine learning model was trained using labelled data based on a taxonomy, which considers that cluster ammunition can appear in many different ways and be found in altering surroundings. However, the accuracy of trained machine learning models remained low until synthetic training data, in the form of photorealistic 3-D models, were used to expand the training dataset.

As an intuition machine *VFRAME: Munition Detector* composes only a small part of a whole human-technical assemblage. This particular machine vison assemblage includes other technical cognizers and infrastructure such as photo sensors, smart phones, Internet infrastructure, storage media, data centres, distribution platforms and machine learning algorithms. Human cognizers in the assemblage involve among others witnesses, citizen journalists, activists and those developing, maintaining and controlling access to technical frameworks.

In *VFRAME: Munition Detector* technical intuitions surface from the nonconscious as the desired object, with required confidence, is found and as a result flagged by the software. However, at this point it is uncertain if the video really documents illegal use of munition. The technical intuition is fed forward to further conscious cognitive processes which take place when researchers find, validate and archive the use of illegal munition. The validation process of cross-referencing the evidence to location, time and other metadata and comparing it with related visual material (e.g. satellite images) is a tedious process done manually by the researchers. Each technical intuition *VFRAME* produces is met with reasonable doubt. Nevertheless, the gap between intuition and decision is used to process that doubt. Only by collecting supporting metadata can researchers present flagged material as evidence with sufficient confidence. Finally, the material is archived with the objective to use it as an evidence tool for legally implementing justice and accountability (*About | Syrian Archive*).

Approaching vision machines as intuition machines reveals the need for authenticating evidence in order to make

determinations beyond a reasonable doubt. Although human gut-feeling and technical intuitions are expressed in drastically different ways, both embody a level of uncertainty. However, human intuitive processing "as reflecting cognitive processing on the *fringe of human consciousness*" (Zander et al. 3) allows us to hesitate and question the results of our intuition. Technical intuition on the other hand is expressed as what Louise Amoore describes as a "single output of a machine learning algorithm" and often "as a decision placed beyond doubt; a risk score or target that is to be actioned" (Amoore 149). In other words, in cognitive machine vision systems the gap between intuition and decision does not always allow for reflection or doubt. However, as Amoore argues: "In the science of machine learning algorithms the doubts of human and technological beings nonetheless dwell together" (147). The successful application of an intuition machine is not dependent solely on the accuracy of a machine learning model. *VFRAME* exemplifies how important it is to consider how to handle the uncertainty of technical intuitions as part of complex human-technical cognitive assemblages.

Mind the Gap—When Things Stay Undecidable

Sometimes the gap between intuition and decision-making is filled with conflicting interests, which leads to difficulties in making decisions. Furthermore, decisions are always made with some level of uncertainty. No matter how much data we collect we can still miss something potentially relevant. Training machines on constantly increasing amounts of data is a race for accuracy, however, this can delay decision-making. *Asunder* (2019) by Tega Brain, Julian Oliver and Bengt Sjölén is an artwork that demonstrates how uncertainty and doubt become a hurdle for making any decision. As a speculative posthuman intuition machine, *Asunder* (2019) proposes large-scale interventions to preserve the earth. Satellite images of rapidly changing geographical sites are used to generate "fictional geoengineering proposals" based on what is best for the planet ("Hack the Planet"). Human financial interests are not taken into account as part of the analysis. Sites such as San Francisco, Vienna, Dubai, the Arctic and the Amazon are presented as cases on the installation's three panels. The first panel shows historical satellite images of the displayed case, for example, Rondônia, Brazil, one of the most deforested places in the Amazon. Simultaneously on the second panel case data is displayed including environmental changes and their impact. In the case of Rondônia, the following results are listed: soy cropping, deforestation, freshwater pollution, supply-chain emissions, agricultural C4H emissions, warming and fresh-air reduction.

Next, the nonconsciousness of the *Asunder* supercomputer performs pattern recognition on satellite images from the past and the present from sites across the world. Technical intuitions in this case are generated by a GAN (Generative Adversarial Network) as surreal composite images. Several of these possible "region modification options" are displayed as images on the second and third panels. The system then chooses one of the generated possibilities and "analyzes the land use changes in it, and inputs that data into a climate model to estimate how the change would impact the environmental performance of the earth overall" ("Hack the Planet"). Hereafter the second panel changes. Instead of satellite composites graphs of climate change models are displayed. The technical intuition as a final output is

reduced to a line of text on the second panel reading RECOMMENDATION: immediate reforestation.

Brain one of the artists behind *Asunder* questions the limits of 'AI for Earth initiatives' in her paper "The Environment is Not a System." She argues that machine learning models used to analyse the environment will always be limited to datasets that cannot encapsulate the complexity of various ecologies. Earth imaging companies like Planet (introduced earlier in the article) promise "geospatial insight" as they are able to collect increasing amounts of data. However, Earth sensing technology will always be limited as everything cannot be translated to data. There is always a chance we miss something essential. The human nonconscious cannot perceive everything, but neither can a machine, thus, decisions need to be made without absolute certainty. Nevertheless, companies like Planet gain from uncertainty because this provides justification to launch more satellites to the orbit, collect more data and develop machine learning models with better accuracy.

For a crisis like climate change, there is a temporal aspect. As Wendy Chun explains, with predictions come the notion of future. As predictions are fulfilled, they are proven true. However, in case of climate change models, for example, the decisions to be made and the actions to be taken should prevent the predictions (Chun 90–91). There is no doubt that Planets' monitoring products can help to identify illegal deforestation and changes in land use. Moreover, their envisioned intuition machines like Queryable Earth will most likely be able to detect objects in satellite images. Delivering promised 'insight' to "how many trees are there in the Amazon?" and how many have been felled between this week and last week (Planet, *TED 2018 - Planet CEO Will Marshall on Queryable Earth*). One of Planet's environmental manager applications might even recommend "immediate reforestation" of the Amazon. From the technical nonconscious of this environmental manager surfaces something we already knew, human habits of deforestation in the Amazon are destructive for its environments, hardly an insight in terms of an "unexpected apprehension of the solution." (Zander et al., 1) The intuition machine can encourage better decision-making, yet it does not ensure that better decisions will be made or action will take place (e.g. planting trees).

The histories of colonialism and imperialism as well as the ongoing exploitation of marginalized communities are sources of our contemporary environmental challenges. Acknowledging how environmental resources have been exploited in the past, Brain thinks that "there is no reason to suggest that AI technologies built and implemented by a cohort of wealthy white men in the US will in any way manage or distribute environmental resources in ways that are equitable for everyone" (158). The speculative posthuman technical intuitions *Asunder* produces are not in line with many corporate and government interests as it prioritizes ecological agendas over financial goals. Certain corporations and governments continue to prosper as the gap between intuition and decision becomes undecidable. History shows that doubts can also become a strategy. For example, the philosopher Lee McIntyre traced post-truth strategies to demonstrate how the tobacco industry established a blueprint of strategies to question 'the truth.' Unyieldingly questioning a close consensus of scientific research that smoking is harmful, the tobacco industry advocates managed to delay political decisions and regulations. Since then similar tactics to plant doubt have also been used in the context of climate change denial to influence political positions for the gain of corporate interests (McIntyre).

Chun calls our attention to the gap between the prediction and the future: "if we use programs and habits to help save the future—to fight the exhaustion of planetary reserves, etc. —we must frame the gap between prediction and the future as calls for responsibility, rather than potential errors or truths." (90) *Asunder* demonstrates how intuition machines are part of human-technical cognitive assemblages in which decision-making powers are distributed throughout the system. Although the gaps between technical intuitions and decisions are important spaces for reflection the quest for more accurate truths can also become a strategy to avoid taking responsibility. If it is irresponsible to stretch the gap and avoid the decisions leading to actions, it can be equally harmful to erase the gap. When intuition machines are automated to make clear decisions quickly rather than making the correct one, then we are at the core of what Luciana Parisi calls 'technological decisionism' (1). When we are forced to accept the choices of an algorithm without any space for reflection or doubt, then the responsibility of making decisions is shifted to the machines.

When intuition machines deny credit, reject job applicants, or flag a person as suspect based on their appearance, there is no gap for doubt between the surfacing intuition and action. The algorithm decides for us. Max Dowey's satiric artwork *Hipster Bar* (2015) exemplifies how technical intuitions function as actuators of automated decision-making. To gain access to drinks in the *Hipster Bar*, customers need to pass as 90% hipster when screened by facial recognition. This intuition machine was trained on 5,000 faces tagged as #hipster on Instagram. After being trained, similar to humans, the machine's nonconscious links certain facial features or accessories with the characteristics of a hipster. Technical intuitions are expressed as subjective ratings (e.g. 92% hipster). The machine is automated to make a decision based on the given intuition by the rule: if more than 90% hipster, then allow access to the bar. When enabling or disabling certain actions become automated in everyday life, then as Chun declares "Code as law is code as police." Or put another way, the machine is delegated the power to both create (meaning) and enforce (judgment). This is a relatively simple example of how the artist as programmer becomes the lawgiver assigning absolute authority, in this case enabling access to a service.

As described human agency is crucial for intuition machines to operate. Hayles suggests that we think of these systems as having 'punctuated agency' (*Unthought* 32). In *Hipster Bar* periods of human agency are required, for example for design and development of the application and tasks like collecting and assembling the training sets for machine learning. Although the latter is mostly hidden labour, it is nevertheless often required in order to achieve shorter intervals of machine autonomy. In the case of *Hipster Bar*, the machine is autonomously accepting or rejecting a visitor's access to the bar.

In the following I focus on the periods of human agency that shape the ways intuition machines perceive the world. In this paper I am discussing the implicit manual labour of assembling training sets, which is only one element of machine learning that shapes how vision machines perceive things. Hence, I acknowledge that my exploration of questions related to intuition machines are limited to supervised learning that usually makes use of human-labelled data in contrast to techniques of unsupervised machine learning. Adrian Mackenzie who writes about machine learners referring both to humans, machines and human-machine relations notes how "machine learning textbooks often warn or enthuse about the profusion of techniques, algorithms, tools, and machines."(75)

Focusing on training datasets and the labour required to assemble them does not imply that developers, statistics, modellers and other subject poisons (that Mackenzie sets out to maps in order to understand the operational formations associated with machine learning) are irrelevant in shaping how machines perceive their environments. Therefore, perspectives presented in this paper might also be applied to other machine learning approaches, however, this would probably require a compilation of technical questions specific to e.g. architectures of neural networks or vectorizing operations.

Artists Shaping the 'Umwelts' of Intuition Machines

Hayles adapts the term 'umwelt' from Jakob von Uexküll's studies in biosemiotics to understand a computer's internal milieu ("Can Computers Create Meanings?"). Umwelts refer to subjective universes through which every organism or, according to Hayles, technical device makes sense of the world. According to Hayles we can never have an embodied understanding of how another species, including technical beings, sees or understands the world. Nevertheless, the umwelt of humans and other species overlap. Therefore, by accepting the limits of never fully understanding how machines perceive the world we can still unravel ways the umwelts of humans and machines overlap. Artists who train machine learning algorithms themselves are selecting, collecting, categorising, classifying and cleaning datasets. These tasks are also part of developing commercial machine vision applications that perform object and face detection in our everyday lives.

Anna Ridler's artwork *Mosaic Virus* (2018) is a one screen video installation displaying machine-generated "botanical impossibilities" (Ridler). The subtle changes that animate the blossoming of tulips are connected to the fluctuating value of bitcoin. *Mosaic Virus* is exhibited alongside with the *Myriad (Tulips)* (2018), a dataset containing images of 10,000 (a myriad of) tulips. This dataset of images was used to train a generative adversarial network (GAN) to generate novel images of tulips.

The labelled images in the tulip dataset, covering a large wall, implies the tedious work of categorising and classifying involved in training machines to learn algorithms in order to recognize patterns. The artist confirms this in an interview: "This was an insane amount of work and it is usually work that is hidden" (Ridler qtd. in Lee). In the process of collecting the dataset, she describes how she searched for striped tulips at flower markets all over the Netherlands. Selecting the tulips was one decision along the chain of decisions the artist made shaping the output. Ridler explains how she consciously changed the output she wanted by changing the shape and colour of tulips she was buying. Choices were also made when the dataset was cleaned and unwanted 'dirty data' was excluded from the final data set. This is especially relevant when a dataset is collected by scraping images based on a tag, such as the case with *Hipster Bar*. As Dovey was harvesting all of the images labelled hipster from Instagram, he ended up with pictures of dogs, avocados and coffee cups. If he would have used all of those images, the accuracy of his facial recognition application would be insufficient. Therefore, to achieve desired accuracy a dataset needs to be cleaned. As Ridler created her own dataset much of the sanitizing work was done in the process of choosing the camera settings and background as well as the cropping of

the image. In both cases, be it cleaning a scraped dataset or producing it, the choices have an effect on the accuracy of the output.

Each of the images in Ridler's *Myriad (Tulips)* dataset is intentionally labelled with the handwriting of the artist. This is to emphasize the human element in categorising and classifying training sets. "What colour, what type of tulip, how striped it was, whether it was in bud or dying" defined the categories in Ridler's taxonomy, hence, each image was identified and classified accordingly. However, what Ridler classified as 'yellow' someone else might have called 'orange.' Although it sounds straightforward to label objects like tulips based on their appearance, Ridler found it difficult to decide when a "thing is a thing." If it's difficult for something as simple as a flower, she questioned, "imagine how difficult it will be for something as complex as gender or identity!" (qtd. in Lee). This statement brings us to the source of why assumptions that AI is neutral or objective are myths. Moreover, when intuition machines become part of our everyday lives, artists question "who gets to decide what images mean and what kinds of social and political work those representations perform" (Crawford and Paglen, *Excavating AI: The Politics of Images in Machine Learning Training Sets*).

Intuition Machines: Neither Neutral Nor Objective

Kate Crawford and Trevor Paglen excavated hundreds of computer vision training sets for an exhibition called *Training Humans*. The artists describe how their research into the structure and organization of training sets unveiled how the overall taxonomy, the individual classes and each individual labelled image, are all infused with politics. Crawford and Paglen are concerned that "bad politics are being imported into AI systems today, but treated as somehow neutral and objective" (Crawford and Paglen, "Kate Crawford in Conversation with Trevor Paglen" 22). Objectivity as we know it, has a relatively short history, as the concept was used quite differently before it received its current meaning in the mid-nineteenth century. Since then, in scientific contexts, objectivity has stood for the ability to judge without external influence. Lorraine Daston and Peter Galison have written on the history of objectivity in their study of image production for scientific atlases. They describe how atlas makers sought techniques for creating images seemingly untouched by the human hand. This implies that some aspect of the self needs to be suppressed to achieve objectivity (Daston and Galison). As the automated gaze creates an illusion of suppressed human intervention in the processing and interpreting of images, it may seem that the outcome is more objective. However, as discussed earlier, working with machine learning requires more human labour than we think.

Artists often create their own training sets; however, the accuracy of object detection or facial recognition applications gets better with an increasing number of training data. To save time and resources, researchers as well as companies use publicly available training sets. Artists have problematized several aspects of how these datasets are assembled. For example, Crawford and Paglen's *ImageNet Roulette* (2019) reveals what happens when people are categorised and labelled as objects. In September 2019 a web version of I*mageNet Roulette* was shortly available. Through the web version of the artwork, the user could upload an image. Thereafter, the image was analysed and the resulting technical intuition expressed as green boxes around detected faces, labelled with words such as ballet dancer,

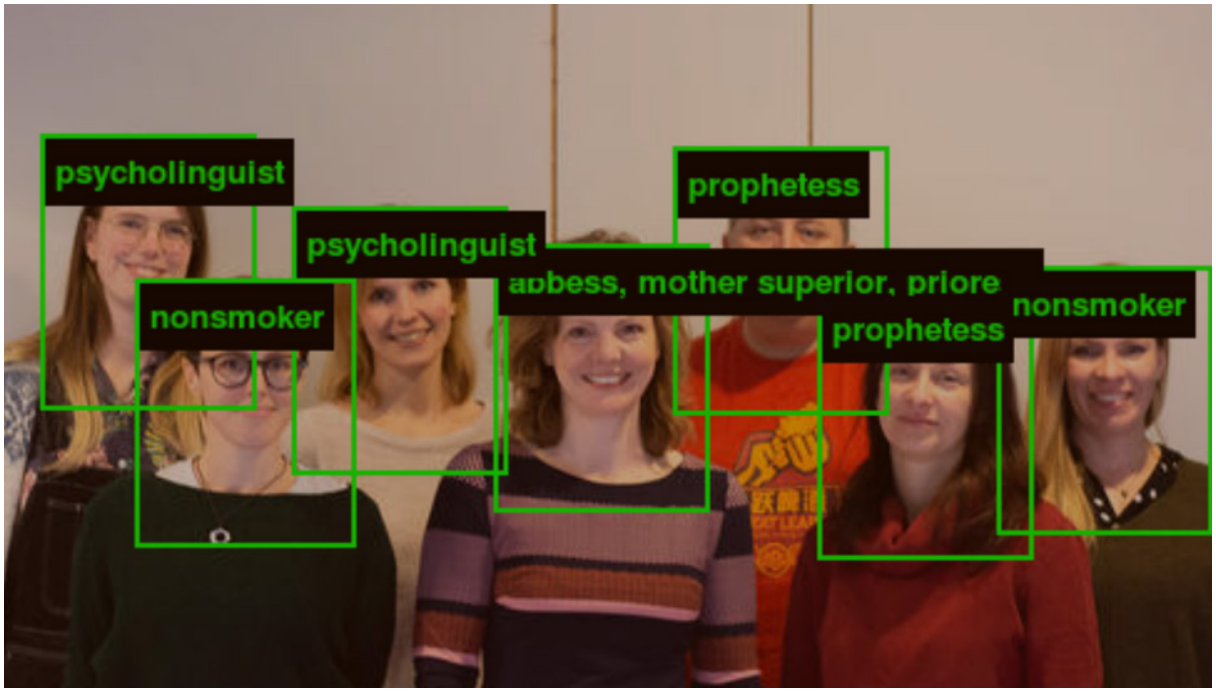


Figure 1: Screenshot of the Machine Vision team at University of Bergen analyzed 20th of September 2019 by *ImageNet Roulette* (web version). Original Photo: Linn Heidi Stokkedal, UiB. All individuals in the photo have given permission to publish this image.

nonsmoker, offender, psycholinguist and so forth. For the artwork a machine learning model was trained using the 'person' category of ImageNet, the biggest publicly available training set with more than 14 million labelled images. It is also one of the most used training sets for object detection. As part of my analysis, I uploaded several images to *ImageNet Roulette*. The results I received ranged from the rather neutral 'computer user' to disturbing labels such as 'rape suspect.' As we uploaded the image of our research team, the results (Figure 1) left us speculating how the machine came to this conclusion.

At the *Training Humans* exhibition, in a live installation version of *ImageNet Roulette*, the visitor was captured by a webcam. When people were detected, the green box with a label was overlaid on the video feed. Moreover, at the exhibition visitors could further examine a selection of labelled images from the ImageNet database used to train the machine learning model for *ImageNet Roulette*. By taking a closer look at the individual images and their labels, it became evident that the subjective worldviews of the person labelling the images played a noticeable role in how they judged people based on their appearance. Considerable interpretation is needed to define who is a boss, a sleeping beauty, a shopaholic or any other among thousands of labels under the top-level 'Person' category of the WordNet taxonomy that was used to classify each individual ImageNet photo.

The ImageNet, like many other datasets, outsourced the labelling to crowdworkers, remotely hired by crowdsourcing websites such as Amazon's Mechanical Turk. As the workers are sorting "an average of 50 images per minute into thousands of categories" (Crawford and Paglen, *Excavating AI: The Politics of Images in Machine Learning Training Sets*) there is no time to reflect how stereotypes or prejudices might affect one's choices. Other research reveals that the crowdworkers annotating ImageNet images represent just a few nations: the United

States is overwhelmingly dominant (45.4%) followed by Great Britain (7.6%), Italy (6.2%) and Canada (3%). All of these countries also represent Western worldviews. In contrast, China and India together contribute to just 3% of ImageNet's labels. This makes a difference. For example, Dovey explains how he "slightly naively" thought that his definition of hipster was universal; however, as he was going through the scraped images he realized: "#Hipster has a more global reach, with more Chinese and Asian and Eastern interpretations of the stereotype that were new to me" (qtd. in Bozzi).

Both *ImageNet Roulette* and *The Hipster Bar* are relatively harmless ways to examine the very real concerns involved with automatically assessing people based on appearance. This entire premise, however, is based on the assumption that that our external guise reflects certain characteristics that can be judged and policed. Researchers claim that machine learning models are able to recognize criminal (Wu and Zhang) or gay (Wang and Kosinski) faces. Companies like the earlier mentioned Faception promote their AI technology as able to recognize classifiers such as High IQ, Academic Researcher, Professional Poker Player, White-Collar Offender, Terrorist or Pedophile. These examples are quite extreme and have been contested. Roberto Simanowski warns: "The promise that Faception software will improve human interaction could turn into a nightmare once the product is used beyond airports, subway stations and other enhanced security locations" (viii).

Further concerns have been raised as current AI resembles the work of nineteenth-century photography in the ways bodily measurements are used to identify people especially criminals (e.g. Crawford and Paglen; Agüera y Arcas et al.). This includes the work of French forensics pioneer Alphonse Bertillon, also referenced as the father of the mugshot. Physiognomists such as Francis Galton and Cesare Lombroso measured and classified people into 'types' based on outer appearance, categorising people according to race, criminality, or deviance from perceived normality. Galton's composite images of the criminal 'type,' composed of superimposed photographs depicting convicted men, carries an eerie resemblance to today's AI generated images of criminal faces. The nineteenth-century assumption that the technical image has a special relationship to the truth in combination with the ideals of physiognomy supported the promotion of scientific racism.

Crawford and Paglen describe how they repeatedly felt shocked as they witnessed how contemporary systems echoed the oppressive traditions of classifying race. For example, in the "UTK Face" dataset, displayed at the *Training Humans* exhibition, race is classified as either White, Black, Asian, Indian or Other, which references the dark histories of racist regimes such as South Africa's apartheid. When race as a physical characteristic is "treated as a matter of fact, written on the body" (M'charek et al. 18) it easily leads to 'phenotypic othering.' In the act of classifying individuals into homogenous groups our skills to read bodily features are clearly bias. We have been educated to link certain characteristics to targeted groups whereas other groups remain unnoticed. Moreover, research in forensics shows how "different technologies produce different versions of race" (M'charek et al. 11) when the results are translated into evidence. Also, the binary classification of gender into 'man' or 'woman' erases all other possibilities of gender identification and assumes that gender is something fixed. Feminist surveillance scholars have problematized the assumed gender stability in regard to birth certificates arguing that "monitoring occurs with different degrees of specificity and intention

depending on the presumed coherence of gender and sex" (Moore and Currah 59). As race and gender are virtually standard in most available face detection applications, the dataset collections presented in the *Training Humans* exhibition make powerful statements because they expose how reductive technical intuitions can become.

Conclusion

In this paper I approach machine vison technologies as intuition machines. This allows for a reading of contemporary artworks that reveals both the advantages and limitations of computer vision technologies used for judgment and decision-making. In artworks, machine vision is represented as malleable, collapsing any assumptions that these technologies are neutral or objective. However, artworks such as *VFRAME* demonstrate how externalizing nonconscious cognitive processes to machines can be a successful strategy when filtering signals out of noise. Nevertheless, technical intuitions easily become discriminatory if they are automatically executed as law like in *Hipster Bar*. *ImageNet Roulette* and *Training Humans* demonstrate how humans are classified as objects by contemporary machine vision systems. The dangers of intuition machines become more apparent when human characteristics are assessed purely based on appearance, echoing dark histories. My analysis of these artworks demonstrates how values, biases, stereotypes and prejudice are ingrained into a machine's umwelt as the training set shapes how machines perceive and operate in their given environments. This means that we also need to allow a gap between technical intuitions and decisions. A gap to doubt, reflect and question the politics of the machine is crucial. However, as *Asunder* demonstrates, technical intuitions might be dismissed and questioning the truth becomes a strategy of lingering in the undecidable as some decisions require responsibility to make them.

Acknowledgement

This paper was written as a part of the Machine Vision in Everyday Life project and has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation program (grant agreement No 771800).

Works cited

About | Syrian Archive. https://syrianarchive.org/en/about/. Accessed 9 Dec. 2019.

Agüera y Arcas, Blaise, et al. "Physiognomy's New Clothes." *Medium*, 20 May 2017, https://medium.com/@blaisea/physiognomys-new-clothes-f2d4b59fdd6a. Accessed 29 Oct. 2019.

Amoore, Louise. "Doubt and the Algorithm: On the Partial Accounts of Machine Learning." *Theory, Culture & Society*, vol. 36, no. 6, Nov. 2019, pp. 147–69. DOI.org (Crossref), doi:10.1177/0263276419851846.

Bozzi, Nicola. "Tagging Aesthetics #4: (Machine) Learning Stereotypes. Interview with Max Dovey." *Digicult | Digital Art, Design and Culture*, http://digicult.it/internet/tagging-aesthetics-4-machine-learning-stereotypes-interview-with-max-dovey/. Accessed 10 Dec. 2019.

Brain, Tega. "The Environment Is Not A System." *A Peer-Reviewed Journal About*, vol. 7, no. 1, July 2018, pp. 152–65. aprja.net, doi:10.7146/aprja.v7i1.116062.

Chun, Wendy Hui Kyong. *Updating to Remain the Same: Habitual New Media*. The MIT Press, 2017.

Crawford, Kate, and Trevor Paglen. "Excavating AI: The Politics of Images in Machine Learning Training Sets". The AI Now Institute, 2019, https://www.excavating.ai. Accessed 3 Oct. 2019.

____. "Kate Crawford in Conversation with Trevor Paglen." *Quaderni Fondazione Prada: Training Humans*, no. 26, May 2019, pp. 2-24.

Daston, Lorraine, and Peter Galison. *Objectivity*. Zone Books, 2010.

"FACEPTION | About Us." *FACEPTION | Facial Personality Analytics*, https://www.faception.com/about-us. Accessed 30 July 2019.

"Hack the Planet: Tega Brain on Leaks, Glitches, and Preposterous Futures." *Logic Magazine*, no. 9, Dec. 2019, https://logic-mag.io/nature/hack-the-planet-tega-brain-on-leaks-glitches-and-preposterous-futures/. Accessed 3 March. 2020.

Hayles, N. Katherine. "Can Computers Create Meanings? A Cyber/Bio/Semiotic Perspective." *Critical Inquiry*, vol. 46, no. 1, Sept. 2019, pp. 32–55. DOI.org (Crossref), doi:10.1086/705303.

____. *Unthought: The Power of the Cognitive Nonconscious*. University of Chicago Press, 2017.

Kahneman, Daniel, and Amos Tversky. "On the Psychology of Prediction." *Psychological Review*, vol. 80, no. 4, 1973, pp. 237–51.

Lee, Syon. *An Interview with Anna Ridler, the Artist behind Mosaic Virus and Myriad (Tulips)*. http://felixonline.co.uk/articles/2019-05-24-an-interview-with-anna-ridler-the-artist-behind-mosaic-virus-and-myriad-tulips/. Accessed 6 Mar. 2020.

Lewicki, Pawel, et al. "Nonconscious Acquisition of Information." *American Psychologist*, vol. 47, no. 6, 1992, pp. 796-801.

M'charek, Amade, et al. "The Trouble with Race in Forensic Identification." *Science, Technology, & Human Values*, Jan. 2020, pp. 1-25. DOI.org (Crossref), doi:10.1177/0162243919899467.

Mackenzie, Adrian. *Machine Learners: Archaeology of a Data Practice*. MIT Press, 2017.

Marshall, Will. *Queryable Earth: Our Vision for Making Daily Global Imagery Accessible and Actionable*. 17 June 2018, https://www.planet.com/pulse/queryable-earth-our-vision-for-making-daily-global-imagery-accessible-and-actionable/. Accessed 10 April 2019.

McIntyre, Lee. *Post-Truth*. MIT Press, 2018.

Moore, Lisa Jean, and Paisley Currah. "Legally Sexed: Birth Certificates and Transgender Citizens." *Feminist Surveillance Studies*, edited by Rachel E. Dubrofsky and Shoshana Amielle Magnet, Duke University Press, 2015, pp. 58–76. DOI.org (Crossref), doi:10.1215/9780822375463-004.

Parisi, Luciana. "Reprogramming Decisionism." *E-Flux* Journal, no. 85, 2017, pp. 1-12.

Pasquinelli, Matteo. "Three Thousand Years of Algorithmic Rituals: The Emergence of AI from the Computation of Space." *E-Flux* Journal, no. 101, Summer 2019, pp. 1-12.

Planet. *FOSS4G-NA 2018 Keynote: Towards a Queryable Earth - YouTube*. 2018, https://www.youtube.com/watch?v=jxfA4WaYPrc&feature=youtu.be.

____. *TED 2018 - Planet CEO Will Marshall on Queryable Earth*. 2018, https://vimeo.com/280233180. Accessed 30 July 2019.

Price, Mark C., and Elisabeth Norman. "Intuitive Decisions on the Fringes of Consciousness: Are They Conscious and Does It Matter?" *Judgment and Decision Making*, vol. 3, no. 1, 2008, pp. 28-41.

Rettberg Walker, Jill, et al. *Mapping Cultural Representations of Machine Vision: Developing Methods to Analyse Games, Art and Narratives*. ACM New York, NY, USA, 2019. mediarxiv.org, doi:10.33767/osf.io/fvwm8.

Ridler, Anna. "Mosaic Virus." *ANNA RIDLER*, http://annaridler.com/mosaic-virus. Accessed 3 Apr. 2020.

Simanowski, Roberto. *The Death Algorithm and Other Digital Dilemmas*. Translated by Jefferson Chase, 2018.

VFRAME: Visual Forensics and Metadata Extraction. 2019, https://ahprojects.com/vframe/. Accessed 12 April 2019.

Virilio, Paul. *The Vision Machine*. Translated by Julie Rose, Indiana University Press, 1994.

Wang, Yilun, and Michal Kosinski. *Deep Neural Networks Are More Accurate than Humans at Detecting Sexual Orientation from Facial Images*. preprint, PsyArXiv, 7 Sept. 2017. DOI.org (Crossref), doi:10.31234/osf.io/hv28a.

Wu, Xiaolin, and Xi Zhang. "Responses to Critiques on Machine Learning of Criminality Perceptions (Addendum of ArXiv:1611.04135)." *ArXiv:1611.04135 [Cs]*, Nov. 2016. arXiv.org, http://arxiv.org/abs/1611.04135. Accessed 1 Nov. 2019.

Zander, Thea, et al. "Intuition and Insight: Two Processes That Build on Each Other or Fundamentally Differ?" *Frontiers in Psychology*, vol. 7, Sept. 2016. PubMed Central, doi:10.3389/fpsyg.2016.01395.

Nicola Bozzi

TAGGING AESTHETICS: FROM NETWORKS TO CULTURAL AVATARS

Abstract

Social media have given social movements unprecedented tools for self-representation, however emancipatory identity politics are drowned out by the white noise of neoliberal self-branding practices. In response to this highly-aestheticised, de-politicised environment, we need a cultural re-negotiation of online categorisation. Rather than focusing on networks, this essay frames tagging as an everyday gesture of social media users that participates in the collective performance of identity. I argue this performance gives way to the materialisation of *cultural avatars* – collective identity figures that lie beyond coherent representation and can reinforce reductive social stereotypes or inspire politically critical figurations. Apart from offering a cultural critique of tagging itself, the essay discusses a range of creative approaches to tagging that de-naturalise processes of online categorisation by drawing critical attention towards them.

APRJA Volume 9, Issue 1, 2020
ISSN 2245-7755

In the age of social media, identity has indeed "returned with a vengeance" (Apprich, ix). Networked platforms have definitely given social movements unprecedented tools for self-representation (think #Occupy, #BLM, #metoo), however the concept of "identity politics" has been complicated by the ambivalent nature of their architecture. Originally stemming from 1970s black feminism, the radical use of collective identity labels for political emancipation is drowned out by the white noise of neoliberal self-branding practices, constantly hi-jacking the flows of the attention economy for individualised purposes. In response to this highly-aestheticised, depoliticised environment, we need a cultural re-negotiation of online categorisation.

How does identity politics change in the age of social media? How does one reconcile the creative and emancipatory potential of resilient, far-reaching networks with the top-down determination of filter bubbles and online advertising? What "new theories of connection" (Chun) can help conceptualise this momentous change in mass-mediation?

Rather than focusing on networks, this essay frames tagging as an everyday gesture by social media users that participates in the collective performance of identity. This performance gives way to the materialisation of what I describe as *cultural avatars* – collective identity figures that lie beyond coherent representation and can reinforce reductive social stereotypes or inspire politically critical figurations.

I start by introducing tagging as a founding feature of the participatory web, hailed for its democratising potential in terms of information organisation. Then, I frame it as an operational form of identity labelling that contributes to naturalise historically grounded practices of social classification, with especially fraught implications in terms of identity politics. In the second section I delve into the aesthetics of tagging, highlighting its role as a stepping stone between the structured ideology of social media categorisation and the poietic power of imagination. Emphasising its aesthetic quality as a performative gesture, my main argument is that tagging is more than data to be arranged in tag clouds or network maps, but a gesture that stitches together complex figurations that lie beyond representation. Finally, I conclude by discussing a range of creative approaches to tagging that denaturalise processes of online categorisation by drawing critical attention towards them. These tagging tactics, I argue, may lead to the creation of more socially imaginative cultural avatars.

For a Cultural Critique of Tagging

Before I venture into exploring the aesthetics of tagging as a performative gesture, I shall introduce it as a practice of labelling and contextualise it within the identity politics of social media. Significantly, while I pay particular attention to the phenomenon of tags and hashtags, I also factor in the tagging of users as an underestimated form of labelling. In so doing, I use different terms: 'classification' (the act of dividing objects and individuals into groups, according to pre-defined categories), 'label' (a category embedded within specific historical-political contexts, often socially charged), 'identity labelling' (the act of classifying an individual as part of a social category, usually from the top down), 'tag' (an operational link created on social media with the purpose of categorising a piece of content – usually textual, but also linked to a username or a geographical coordinate), 'tagging' (the gesture of creating a tag). While these terms refer to materially

distinct objects and actions, in this essay I focus on tagging as a form of identity labelling, a context in which these terms blur and overlap. Rather than confusing the reader, my goal is here to highlight the critical charge and poietic potential of this conflation.

To understand the implications of tagging in terms of social categorisation and identity labelling, it is useful to consider the foundational framework provided by Geoffrey Bowker and Susan Leigh Star. Discussing several categorisation systems that are immediately relevant to human bodies – such as the International Classification of Diseases and race classification under apartheid in South Africa – Bowker and Star highlight how classification systems are far from neutral: politically and socially charged agendas are often presented as purely technical and thus difficult to see, while the "enfolding" of the layers of classification into a working infrastructure (Bowker and Star 196) leads to the "naturalisation" of political categories – when members of a community forget the local nature of an object's meaning or the actions that go into maintaining and recreating its meaning (299). Being politically and ethically crucial to recognise the vital role of infrastructure in the "built moral environment", Bowker and Start call then for "flexible classifications whose users are aware of their political and organisational dimensions and which explicitly retain traces of their construction." In other words: "the only good classification is a living classification" (326). Tagging, we shall see, seems to respond to many of these requirements.

As a form of categorisation, tags are one of the defining features of social media. They were introduced in the mid-2000s by the social bookmarking site del.icio.us, which allowed users to share links and label them individually through the use of textual keywords that made them easily searchable and accessible through the website. According to Thomas Vander Wal, del.icio.us was a turning point because it introduced identity—the object being tagged, but also the tagger—thus allowing for dynamic hyperlinking between pieces of content. In fact, the tags users choose to categorise the content they share on social media are more than textual references: they instantly become active links, easily clickable and dynamically organising content by linking a potentially heterogeneous constellation of items to the same word.

The possibility for users to create their own tags prompted Vander Wal to coin the term "folksonomy" – a portmanteau of "folk" and "taxonomy" referring to the bottom-up organisation of information. Importantly, the collective dimension of tagging and folksonomies is also in sense-making, and the tendency of folksonomies to stabilise around the most used terms has been seen as a sign of positive self-regulation (Shirky), while coexisting with minority views and different perspectives (Weinberger). Weinberger in particular uses the tree as a metaphor for traditional taxonomic structures, linking back to those of the Swedish biologist Carl Linnaeus and the Enlightenment, and juxtaposes it to the folksonomy as a heap of leaves – a botanical metaphor that Cairns extends to the rhizome, famously theorised by Deleuze and Guattari as a philosophical conceptualisation that allows multiple non-hierarchical representations and interpretations (Cairns 3).

Beyond its taxonomical efficiency, however, the infrastructural openness of tagging can have problematic consequences: spammers, it is estimated, generate about 40% of tags to manipulate search engines (Korner, Benz et al). In terms of ontology and meaning, this can have dangerous implications: the impact of white noise or external "trolling" represents a potential obstacle in the establishment of a shared ontology to represent the values and interests of a group, especially in the case of communities and

social categories where definitional stakes are high. In this respect, Avery Dame uses Tumblr's trans community as a compelling case study, documenting the emergence of a trans-specific folksonomy as well as the definitional conflicts within it. While trans users set themselves apart from wider public discourse through the use of specific terms, the folksonomy is unable to account for different user practices and gives them equal weight in influencing its development. As the folksonomy settles into a stable, ontological organisation through repeat use, debates over tag definition ensue. "Given the deep importance of ontological security to trans self-narrative," Dame points out, "users react strongly to contestations over meaning" (Dame 14). This process results in either the creation of new terminology or the policing of other users' tag usage.

De Kosnik and Feldman also notice the affordances of tagging in terms of identity politics, pointing out that "race, gender, sexual orientation and nationality are among the oldest and most persistent metadata, or 'tags', assigned to and organising human relations" (De Kosnik and Feldman 12). Recent accounts on the cultural specificity and historical situatedness of movements like #BlackLivesMatter significantly juxtapose these phenomena to the post-racial, post-feminist, "colour-blind" ideology that dominates the Internet (Brock), disarticulating racism from systemic oppression to individual beliefs (Florini 189) and producing reactionary campaigns like #AllLivesMatter. In other words, the networks stitched together by tags allow specific identity groups to express themselves, while exposing them to the antagonism of those who believe social difference is only a memory from a pre-Internet past.

As the aforementioned scholars highlight, a tag is then not just a quick technical shortcut for online participation: as an identity label, it can acquire an embodied and cultural character. Since a category is "in between a thing and an action" (Bowker and Star 285), I shall consider an often overlooked instance of tagging: the @-ing of users. While the # is still used for categorisation and topics, on a number of platforms it is possible to tag users by using the @ symbol followed by their nickname. Unlike content tagging, user tagging does not necessarily involve any attachment of keywords: a user is not "tagged" with a keyword as we would a piece of content, but their username is used itself as a tag that links their profile to a piece of content – for example a photo of that user, an article they might be interested in, or a meme they might relate to. Unlike Facebook, Twitter does not allow the "untagging" of oneself from other people's tweets, resulting in a material addressibility (Honeycutt and Herring) that allows anyone to "link up" to anyone else by mentioning their Twitter handle. This function can facilitate forms of trolling or online harassment (Phillips), which can have exponentially heavier effects on users with a large following or, most notably, users whose social identity is defined by "intersectional" (Crenshaw) markers of gender, race, or sexual identity/orientation.

By adopting the technical posture of a living classification, tagging has thus turned this process in a performative gesture that, often without appearing as an act of categorisation, formats identity so that it can be searchable and networkable. Relieved of the ideological weight stressed by Bowker and Star, this de-politicised materialisation of labelling practices risks accelerating the naturalisation of social categories. What kind of cultural criticism, then, shall we combine with this infrastructural awareness?

Significantly, Bowker and Star's work is deeply inspired by feminist and race-critical labelling practices, which "offer traditions of reflective denaturalisation, of a politics

of simultaneity and contradiction" (Bowker and Star 308). Arguing computer scientists should read African-American poets and radical feminism (302), Bowker and Star in fact praise Donna Haraway's famously hybrid category of the cyborg for defusing essentialist romanticism and techno-hype (301), as well as Gloria Anzaldua's "borderland". After the Hacker and the Nerd of Internet lore, then, a cultural critique of tagging is useful to consider what kind of figures emerge out of this socially-exploded Internet culture, what kind of cultural ideologies they reflect, and what kind of social categories are reinforced or marginalised as a result.

Beyond the Tag Cloud: From Figures to Figuration

Having clarified the techno-cultural context of tagging as a form of identity labelling in the age of social media, I shall now explore how its materiality can engender a cultural and political aesthetic in its own right. I articulate this argument in two movements: first, I set the premise for an aesthetic framing of social media by reconceptualising the practice of tagging in the context of "relational aesthetics" (Bourriaud); then, I build on this premise to explore Olga Goriunova's notions of "art plaforms" and "digital subject" to outline how the everyday performance of social media users engenders cultural figurations that can be critically challenged through tagging.

From a scholarly perspective, the traceability of tagging has inspired a great deal of varied research. In particular, in terms of visualisation, the availability of tag streams as RSS data has enabled a number of tools, which found most prominently expression in the image of the once ubiquitous "tag cloud" (Trant 19). However, information aesthetics has its limits. From a formal perspective, its "bird's eye view" has been complicated by a variety of recent cultural and technical developments: the emergence of fake news, massive use of bots, AI, trolling, memetic warfare, and in general the ambivalence inherent to Internet content (Milner & Phillips); from a political one, the renovated urgency of identity labels mentioned in the previous section might also demand a different approach. In relation to the first point, Alexander Galloway makes an interesting critique of information visualisation. Galloway argues all maps of the Internet, all social graphs, all word clouds look the same, and the aesthetic repercussion of this is that "no poetics is possible" in such a uniform space. For Galloway, the symbolic inefficiency inherent to information aesthetics is linked to the augmentation of algorithmic efficiency, ultimately proving that "there are some things that are unrepresentable" (85-86). In order to move beyond the visualisation of tagging as a modular element to be arranged in graphs, network maps, and tag clouds, and reinstating its imaginary (if not symbolic) efficiency, I shall consider it in relation with "relational aesthetics" (Bourriaud), a concept emerging from contemporary art criticism in the late 1990s.

According to Nicholas Bourriaud, in the context of an exhibition works of "relational art" create an "arena of exchange" that proposes and represents certain "models of sociability" (e.g. a bowl of pad thai served by an artist in a New York gallery, an inside joke for Turkish immigrants diffused through a speaker) which must be judged on the basis of aesthetic criteria (Bourriaud 6). Since art provides a "plane of immanence" for the "exercise of subjectivity" (101), the above has implication in terms of how the subject itself is produced. The participation in the relational aesthetics theorised by Bourriaud in fact echoes two important theoretical takes on the aesthetic potential of the everyday: firstly the tactical practice of the everyday,

introduced by Michel De Certeau as an artful form of daily resistance against the alienating bureaucratisation of life under capitalism (without any real hope for systemic change); secondly, Félix Guattari's "de-naturalisation" of subjectivity (Bourriaud 88), which conveys the human sciences and the social sciences "from scientific paradigms to ethical-aesthetic paradigms" (96). In other words, for Bourriaud art as a collective relational practice is both inescapably embedded within and somehow at one remove from the productive constraints of capitalistic exchange, giving a glimpse into (and an experience of) a possible alternative.

This paradoxical – indeed, unrepresentable – quality of relational aesthetics offers a good perspective to examine cultural production on platforms like Facebook, Twitter, or Instagram, and is especially appropriate in the context of tagging. Bourriaud presents in fact relational aesthetics as a theory of form, and defines form as a "lasting encounter" (Bourriaud 7). Since tagging establishes a material link and a trackable connection between users or content, it is the perfect materialisation of such an encounter. As a techno-cultural gesture, tagging has the power to coalesce a wide range of formations into a relational aesthetics that materialises social values by pulling together the most heterogeneous cultural elements (images, videos, users, places) the sum of which cannot be represented, but indeed engenders 'something'.

That something, I argue, is a 'cultural avatar': a collective, contradictory, unrepresentable subject that is culturally shared and yet may or may not be politically activated. For Bourriaud, in fact, material entanglement in the socio-economic infrastructure and narratives of empowerment interact. Similarly, the lines and dots traced by tagging appear first and foremost as expressions of a productive ethos, which often masks the ideological baggage of the practice as a form of social classification. Its re-politicisation is thus not a given: it has to be achieved by identifying it as a labelling practice. In other words, to re-politicise the relational aesthetics of tagging we need some kind of figurations to outline what models we are critiquing. Using the term "avatar" is then important to highlight how these figures lack the emancipatory potential of figurations like Haraway's cyborg – they too exist between fiction and materiality, between the cultural ideals they stand for and the socio-political predicaments they arise from, but their historical grounding in problematic labelling makes them too contradictory and stereotypical to be truly utopian. The emphasis on stereotype is here crucial: rather than from authenticity, cultural avatars stem from areas of culture as they become compromised. To clarify this and critically conceptualise social media as an aesthetic infrastructure for the production of subjectivity, it is useful to consider the notions of "art platform" and "digital subject" outlined by Olga Goriunova.

Goriunova does not address mainstream websites like Facebook or Twitter, but provides a relevant conceptual framework in her definition of "art platform": a network platform that produces art, here understood broadly as a process of creative living with networks. Art platforms are "awkward mappings between technical, aesthetic and social forces that allow us to come closer to key issues in larger cultural formations, but also discover the exceptionalities of the particular" (*Art Platforms* 2). Crucially, an art platform engages with practices that do not necessarily self-conceptualise as art (7), although they participate in the production and amplification of new cultural currents and maybe even create new cultural figures and vectors of change (10).

This possibility for "new cultural figures" and "vectors of change" is crucial to my argument and it is further explored in Goriunova's

later theorisation of the "digital subject". Highlighting the distance between lived and datafied subjects, Goriunova explains how social media complicate the relationship between fact and fiction. She emphasises that digital subjects are always "more or less than human" ("Digital Subject" 9) – a formulation that opens up to the possibilities of fiction. In this respect, Goriunova references Amalia Ulman's *Excellences & Perfections* (2014), a prolonged Instagram performance in which the artist impersonated a fictional character that participated in all the dynamics of social interaction required and encouraged by the platform to become a typical influencer. In her tale of personal development, delusion, and eventually redemption, Ulman inhabited a range of stereotypical female tropes: the next-door girl moving to the big city, the image-obsessed go-getter pursuing fame through artificially-enhanced appearance, the detoxed mother finding her way back to self-love. For Goriunova, Ulman's fake identity (whose success lied also in its controversial character) exposed the stereotypical dynamics of identity construction through a painstaking re-enactment ("Digital Subject" 17). Since "[d]ata regimes do not distinguish between bodies and novels, nature and culture", this type of participation taps into a key site of contestation: the question of how the real will be constructed (18). In the case of Ulman, the specific performance enacted by the artist feeds back into the contradictory narratives of the female stereotypes she is channeling – an open "constellation of references" that do not amount to facts or documents (Day 66, cited in "Digital Subject"), but may nonetheless shape how the aforementioned contestation of reality is played out. Ulman's material engagement with collective stereotypes through social media may thus be exemplary of a tactical approach to networked identity, but her reliance on what we could describe as the Aspiring Female Instagram Influencer – a "cultural avatar" of peer-pressured femininity and capitalistic self-branding, unfinished and contradictory yet culturally shared and materially accessible – is necessary for her intervention on that configuration.

Goriunova's aesthetic framing of social media is not only very useful in order to renegotiate the terms of representability in the age of social media, but also a very good premise for a cultural critique of tagging. I have in fact framed tagging as a techno-cultural gesture that draws lines across users, concepts, ideas: cultural avatars do not coalesce merely out of data, but "evaporate" (to keep within the cloud metaphor) out of a range of tagging gestures that suggest or evoke these stereotypical figures, with different ideological orientations. Importantly, a cultural avatar does not correspond to any identity label per se, but emerges in part from a series of collateral labels – a tag-cloud of sorts, which broadly defines a relevant (yet not exclusive or exhaustive) imaginary. Be it the #BlackLivesMatter movement, followers of the #ootd ("outfit of the day") hashtag on Instagram, or an army of trolls @-ing a celebrity on Twitter to target her with sexist insults, the cultural avatar being evoked at each tagging is not a coherent representation, but something elusive and contradictory that materially embodies social conflicts and, sometimes, exacerbates them. Networks may serve as the material skeleton of such figure, but it is fleshed out by heterogenous layers of cultural references and social stereotypes.

An aesthetic critique of tagging practices shall then not simply be grounded in the materiality and embeddedness of these practices – to do that would be akin to the network mapping criticised by Galloway for being devoid of poetics – but in some kind of "formations" (to use Bourriaud's term) that these practices feed into. If these do not

amount to finished facts, they may instead engender something that is unfinished, and for this very reason political.

Tagging Aesthetics

Throughout this essay I have framed tagging as a performative gesture, exploring how it participates in the materialisation of cultural avatars. To conclude, I shall examine a few examples of critical approaches to tagging that de-naturalise social categories, exposing the problematic implications of digital architectures. Most of these endeavours relate to what I have defined as cultural avatars, steering them from the stereotypical towards the critical. Because they often elude the genre of "media art", I see them as happening at the intersection of a semi-spontaneous relational aesthetics (emerging from the intuitive affordances of social networks) and "tactical media" (Garcia and Lovink) – a concept that updates the tactical ephemerality of De Certau's "art of the weak" (De Certau 36) to the guerrilla approaches of 1990s media activism. While some have argued the concept of relational aesthetics may have been made less relevant within the new digital infrastructures of social media – themselves based on platforms, collaborations, and "prosumers" (Bishop, "Digital Divide") – Bourriaud's term has in fact been usefully re-contextualised within a digital environment by Rita Raley in her revisitation of the formula originally coined by Garcia and Lovink.

Tactical uses of tagging are not new. Several scholars of social media have written about how these infrastructures favour a "context collapse" (Wesch; Marwick and boyd), but on a basic material level several artists have used tagging as a tool to target specific imaginaries and stereotypes. Discussing Petra Cortright's YouTube video *VVEBCAM* (2007), Quaranta points out the artist deliberately used improper tags to categorise the work (related to sex, porn, and pop culture), to the point that the video was removed from the platform for using misleading keywords. In examining Jayson Musson's famous YouTube series *Art Thoughtz* (2010), in which the artist impersonates a heavily stylised hip-hop art critic, Rajgopal also highlights how the possibility to access different audiences through the affordances of social media allows for relational aesthetics to maintain a useful potential for antagonism – originally, its main weakness (Bishop, "Antagonism and Relational Aesthetics"). Fittingly, the tags for Musson's first video demonstrate the artist was specifically targeting both the art world and hip-hop listeners, proving that (like in Ulman's case) the aesthetic brilliance or political potential of his intervention should be criticised in reference to those imaginaries.

While Ulman's use of tags in *Excellences & Perfections* (2014) is not immediately remarkable, the Instagram parody account @jenyakenner seems to address the same Aspiring Female Influencer avatar. Portraying a fictional deadpan fashionista, the account participates in celebrity-driven fashion trends and engages in a relentless use of tags like #ootd ("outfit of the day") and even creates new ones (#waterambassador). While the former is a way to plug into mainstream fashion-related discourse on Instagram, the use of the latter exemplifies an ironic commentary on the commodification of natural resources and their exploitation by private companies and self-branding celebrities.

Another performative approach to hi-jacking Instagram tags to challenge mainstream stereotypes is @catonacci_official, presented as a former Marlboro model now forced to work as a cat sitter to pay student debt. While the artist maintains the posture of a self-assured male individual – the old-fashioned template of masculinity of the

Marlboro man – the figure of the cat injects layers of irony, ambiguity and even vulnerability. Ultimately, the contemporary figure of the recent graduate, forced into precarious work and financially pressured by debt, is put in stark contrast with the trope of the cat picture, typical click-bait on social media. This ambiguous, conflicted figure is injected into Instagram's "catscape" through the use of staple cat-related tags like #catlife and #catstagram, piggy-backing on the flows of Instagram's attention economy (Bozzi, "Tagging Aesthetics #1").

Manipulating hashtags is the most immediate of tagging tactics, however other types of tagging can also be used to generate critical discourse about social media categorisation and stereotypical cultural avatars. In *Hipster Bar* (2015), for example, artist Max Dovey used images tagged #hipster and #nonhipster on Instagram to train a machine learning algorithm that classifies queueing patrons at a fictional bar he set up at various exhibitions; if visitors match the hipster stereotype they are allowed in, otherwise the gate remains closed. The deliberately flawed process of selection designed by Dovey exposes the elusive nature of cultural stereotypes – in this case an avatar that stitches together pictures of bearded men and glasses along with coffee cups and clothing brands – and how they are impossible to recreate algorithmically (Bozzi, "Tagging Aeshetics #4"). Another example of critical approaches to a different type of tagging is Helena Suárez Val's research on feminist geo-location: in her PhD project, Suárez Val examines how mapping feminicide across Latin America using geo-tags and open data can be used to interrogate these practices and their implications in terms of embodiment, memory, representing women as victims, and their body as a territory.

Fuzzy and small as they might be, the heterogeneous practices mentioned above offer an encouraging glimpse into the possibilities of tagging aesthetics in the cultural renegotiation of online categorisation. With a bit of luck, the cultural avatars they engender might teach us how to leverage their stereotypical quality as an inclusive, rather than reductive, technology.

Works cited

Anzaldúa, Gloria. *Borderlands / La Frontera: The New Mestiza*. Aunt Lute Books, 1987.

Apprich, Clement, Wendy Hui Kyong Chun, Florian Cramer and Hito Steyerl. *Pattern Discrimination*. University of Minnesota Press, 2018.

Bishop, Claire. "Antagonism and Relational Aesthetics." *October* 110, Fall 2004, 2004, pp. 51–79.

____. *Artificial Hells: Participatory Art and the Politics of Spectatorship*. Verso, 2012.

____. "Digital Divide: Contemporary Art and New Media." *ArtForum*. https://www.artforum.com/print/201207/digital-divide-contemporary-art-and-new-media-31944 Accessed May 31, 2020.

Bourriaud, Nicholas. *Relational Aesthetics*. Les Presses Du Reel, 2002.

Bowker, Geoffrey and Susan Leigh-Star. *Sorting Things Out. Classification and Its Consequences*. MIT Press, 1999.

Bozzi, Nicola. "Tagging Aesthetics #1: Of Cats and Models. Interview with Jacopo Calonaci." *Digicult*, 2019, https://digicult.it/internet/tagging-aesthetics-1-of-cats-and-models-interview-with-jacopo-calonaci/ Accessed May 31, 2020.

____. "Tagging Aesthetics #4: (Machine) Learning Stereotypes. Interview with Max Dovey". *Digicult*, 2019, http://digicult.it/internet/tagging-aesthetics-4-machine-learning-stereotypes-interview-with-max-dovey/ Accessed May 31, 2020.

____. "Tagging Aesthetics #5: Feminist Politics of (Geo)Location. Interview with Helena Suárez Val". *Digicult*, 2019, http://digicult.it/internet/tagging-aesthetics-5-feminist-politics-of-geolocation-interview-with-helena-suarez-val/ Accessed May 31, 2020.

Brock, Andre. "'Who do you think you are?': Race, Representation, and Cultural Rhetorics in Online Spaces". *Poroi* (6)1, 2009, pp. 15-35.

Cairns, Susan. "Tag! You're It! What Value Do Folksonomies Bring To The Online Museum Collection?" *Museums and the Web 2011: Proceedings*, edited by Jennifer Trant and David Bearman. Archives & Museum Informatics, 2011, https://www.museumsandtheweb.com/mw2011/papers/tag_youre_it_what_value_do_folksonomies_bring_.html Accessed May 31, 2020.

Crenshaw, Kimberlé. "Mapping the Margins: Intersectionality, Identity Politics, and Violence Against Women of Color." *Stanford Law Review*, (43)6, July 1991, pp. 1241-1299.

Dame, Avery. "Making a name for yourself: tagging as transgender ontological practice on Tumblr." *Critical Studies in Media Communication*, (33)1, 2016, pp. 23-37.

Day, Ronald E. *Indexing It All: The Subject in the Age of Documentation, Information and Data*. MIT Press, 2014.

De Certeau, Michel. *The Practice of Everyday Life*. University of California Press, 1984.

De Kosnik, Abigail and Keith Feldman. *#identity: Hashtagging Race, Gender, Sexuality, and Nation*. University of Michigan Press, 2019.

Deleuze, Gilles and Félix Guattari. *A Thousand Plateaus: Capitalism & Schizophrenia*. University of Minnesota Press, 1987, sixth reprint 1996.

Florini, Sarah. *Beyond Hashtags. Racial Politics an Black Digital Networks*. New York University Press, 2019.

Galloway, Alexander R. *The Interface Effect*. Polity Press, 2012.

Garcia, David, and Geert Lovink. "The ABC of Tactical Media." *Nettime*, 16 May, 1997, https://www.nettime.org/Lists-Archives/nettime-l-9705/msg00096.html Accessed May 31, 2020.

Goriunova, Olga. *Art Platforms and Cultural Production on the Internet*. Routledge, 2011.

____. "The Digital Subject: People as Data as Persons." *Theory, Culture & Society*, 36(6), 2019, pp. 125-145 https://doi.org/10.1177/0263276419840409

Haraway, Donna. "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century." *Simians, Cyborgs and Women: The Reinvention of Nature*. Routledge, 1991, pp. 149-181.

Honeycutt, Coutenay and Susan C. Herring. "Beyond microblogging: Conversation and collaboration via Twitter." *Proceedings of the Forty-second Hawaii International Conference on System Sciences (HICSS-42)*. IEEE Press, 2009.

Korner, Christian et al. "Stop Thinking, Start Tagging: Tag Semantics Emerge from Collaborative Verbosity." *Proceedings from the 19th International Conference on the World Wide Web*, 2010, pp. 521-530.

Marwick, Alice E. and danah boyd. "I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience." *New Media & Society*, 13(1), 2010, pp. 114-133.

Milner, Ryan M. and Whitney Phillips. *The Ambivalent Internet: Mischief, Oddity and Antagonism Online*. Polity Press, 2017.

Phillips, Whitney. *The Oxygen of Amplification. Better Practices for Reporting on Extremists, Antagonists, and Manipulators Online*. Data & Society Research Institute, 2018.

Quaranta, Domenico. "Between Hype Cycles and Present Shock." *NERO*, 2020, https://www.neroeditions.com/docs/between-hype-cycles-and-the-present-shock/ Accessed May 31, 2020.

Rajgopal, Ambika. *Relational Aesthetics in the Age of Internet Art: A Case Study of Hennessy Youngman*. Student thesis, Visual Culture, Goldsmiths, University of London, 2013.

Raley, Rita. *Tactical Media*. University of Minnesota Press, 2009.

Shirky, Clay. "Institutions vs. collaboration." *TEDGlobal 2005*, 2005, https://www.ted.com/talks/clay_shirky_institutions_vs_collaboration/transcript Accessed May 31, 2020.

Trant, Jennifer. "Studying Social Tagging and Folksonomy: A Review and Framework." *Journal of Digital Information*. *Special Issue on Digital Libraries and User-Generated Content*, 2008.

Vander Wal, Thomas. *Folksonomy Coinage and Definition*, February 2, 2007, http://vanderwal.net/folksonomy.html Accessed May 31, 2020.

Weinberger, David. “Taxonomies to Tags: From Trees to Piles of Leaves.” *Release 1.0* (23), 2005, pp. 1-32.

Wesch, Michael. “YouTube and You: Experiences of Self-awareness in the Context Collapse of the Recording Webcam.” *Explorations in Media Ecology*, 8(2), 2009, pp. 19-34.

Giseli Vasconcelos, Tatiana Wells and Cristina T. Ribas

TACTICAL ARCHIVES CARTOGRAPHY: TWO DECADES OF TACTICAL MEDIA AND ART IN BRAZIL ENHANCING A FEMINIST PERSPECTIVE

Abstract

This article narrates our work through archive and cartography to discuss a body of research that runs throughout our lives - as producers, developers, non-artists, artists, archivists, researchers. We have been engaging in networks that develop the internet, tactical media, and free knowledge since the beginning of 2000 in Brazil, in a series of festivals, projects, platforms and other forms of gatherings. A lot of this history is lost in databases and we have been putting our efforts together to bring this digital and material archive together, republishing, editing and re activating it. At the same time, it is inevitable that we bring our own perspective to building the archive, what we identify as a feminist perspective, a weaving of histories (*reinventeceduras*) and modes of production that are also a "maintenance" of technical infrastructure as a practice of care, connected to the reproduction of our own lives. Cartography is a concept and tool that allows for the gathering of the polyphony of the voices engaged, a cartography that is not total, opening up for collective analysis and for the intervention in the present and future.

Complete diagram: *Tactical Archives* (2018), https://midiatatica.desarquivo.org/wp-content/uploads/sites/6/2020/02/diagrama_Santos-1.pdf

APRJA Volume 9, Issue 1, 2020
ISSN 2245-7755

Cartography and archives can be approached in many different ways. With the work of Tactical Archives, we propose a visual cartography that (un)covers a constellation of publications, events, and festivals around tactical media, the internet and free knowledge in Brazil that took place between 2002 and 2018. The political dimension is also woven into this cartography, aiming to give substance towards a pluriversal future. We chose cartography as a research method because it allows for collective thinking, and because it works as a tool to open up a range of analyses and approaches to a particular Brazilian internet culture. We understand that individuals are not solely in the world and that subjectivity is not produced individually: it is produced collectively. In addressing ourselves to this history, we decided to approach it from our perspective — a feminist perspective.

In this work we engage with feminist narratives, for they hold the capacity to reclaim a technology of care and repair, a technology that we situate ourselves within. As Maria Puig de la Bellacasa maintains, the maintenance of technical infrastructure is a practice of care, creativity, and the reproduction of life. We think of the archive in terms of recombination and extension, producing it as a poetic/political tactic. Design or curatorship, from a feminist perspective, confronts the discourses of mainstream techno-narratives (Wells), especially considering that much of the thought around singularity and care is often marginalized, cast aside in technological practice and theories. Hence, we invoke border epistemologies, a tradition in Latin American feminisms and decolonial theory, put forward by the work of Gloria Andalzúa. Border epistemologies take inspiration not only from the hybridity that comes from Chicanx and Latinx geographical areas, but also a material experience through the lens of gender, identity, race, and colonialism.

This cartography and archive is a body of research that runs throughout our lives as producers, developers, non-artists, artists, archivists — people situated within digital production networks, the internet, tactical media, and free knowledge. In 2018, gathering at an exhibition in São Paulo where the online archive was created as an installation, we (Cristina, Giseli, Tatiana) realized it was

necessary to set up a larger gathering in order to share our experiences. We organized a laboratory for a group of ten women[1] who are active in the common groups and networks in Brazil. The idea was to cultivate broader collective experiences in relation to this production and nurture feminist perspectives that were not previously organized.

Tactical Archives is based on the idea of intellectual generosity, an idea that runs not only through the content (based on publications) but also presents a fundamental political commitment. The political and ethical attitude of sharing starts roughly at the beginning of the Brazilian internet in 1996. Led by the academic environment, it has shifted along with shifts in Brazilian political eras, and also influenced public Internet access. From the amalgamation of materials, research and literature we have designed visual cartography, a cloud of concepts, that is contrasted amid this digital garbage and enclosures that we have today — including censorship, alt-right captures (Gilroy), server seizures and deliberate *apagamentos* (erasures). Our main concern with the archiving, preservation (maintenance) and organizing of this data is, above all, a political preoccupation that is, indeed, about the present itself.

Archive is here thought of not as a procedure that aims only at organizing and preserving, but also as a way of creating forms of access and relation to a specific material and its histories. It was from this thinking that Cristina Ribas (in 2008) created the concept of 'de-archive' also to name the platform Desarquivo.org. It wants to endorse that as important as preserving is the act of reading, interpreting and other forms of agency that a specific content might ask for. Literally, moving something out of the place where it seats. This is also thought of in relation to the pace and to the other connections an operation of de-archiving launches: archive/de-archive is done *extensively*, as well as *intensively*.

The personal experiences of the participants and the perception of their own life trajectories, from the political moment that Brazil was living through to the one it lives now, forms the *intensive* part of the cartography. The *extensive* part refers to the capacity of touching other lives and sharing the knowledge produced throughout these years. So, we see cartography as a tactical tool for the present, and as a means of examining technopolitics today. Looking at this production of digital culture, this fountain of free knowledge, allows us to reorganize the present in order to project new futures.

From the year 2000 onwards, collectives, self-organized spaces and individuals in Brazil have been producing a body of initiatives that put into practice the development of tactical media, inspired by marginal and hybrid perspectives that have sprung from counter-cultural associations and low-tech (re)inventions. This followed the media culture of the 1990s that has influenced digital arts practices — from the Zapatista appropriation of the internet, to the Western concept of tactical media. In the years that followed, unseen connections were created between the artistic production and digital culture in the realm of public policy, as well as proposals from arts and media groups, and social struggles in direct relation with vulnerable groups — for example, groups with no access to media at all (indigenous, *quilombolas*[2], peripheric groups in favelas and more).

Given the state of the internet today, with the massive rise in the use of corporative social networks and even the declaration by some regarding the death of the original internet's project (Geert Lovink and Ned Rossiter), it is time to join the concepts of art, media, network, internet and archive all together, and instigate a research method that looks at the possible effects and fallouts

of the past 20 years. It is not the intention of this text to delineate other genealogies than a provocation-ontology of a southern tactical media intervention, from a feminist and peripheric perspective.[3]

Tactical media has been a practice present in Brazil for a long time, evident by the strong previous network of free radios, free software movements, and *tecno-gambiarras*[4] of daily existence in peripheral areas. The Tactical Media Brasil manifesto is a 'détournement' of the anthropophagic and the communist manifestos (Rosas et al).[5] It does not confront or assimilate, and as such, wants to do both. The festival took place as a collective occupation of an art space in the city of São Paulo, and was quite successful to make visible and popularize the tactical media concept.

From our past material experiences with media laboratories with recycled equipment (low-tech), collectively constructed by its own communities (*metareciclagem*),[6] through the times of operating free software programs and open licenses as autonomous spores of social networks (nomadic and decentralized), to the actual state of artificial (un)intelligence where apps and mobiles operate on neocolonial captures feeding up ever more capitalist and fascist algorithms, the question we ask ourselves is 'what forms did previous networks take to rethink institutional structures and create new forms of cooperation, public participation and artistic action?' The question recalls Clemens Apprich in his article "Remaking Media Practices – From Tactical Media to Post-media." He writes: "the practices of tactical media have not disappeared but have been incorporated to everyday life (post-media)." Where can we (re-) find such practices?

How to de-archive

We initially listed a large amount of digital content, which included websites, publications, discussion lists and wikis. This content enabled us to identify guidelines, so through this history we could draw along our own engagement in these practices. The substantial content for the visual cartography is based on a chronology that made sense for us and our personal histories, building up this archive dedicated to the compilation and restoration of the digital material. Our first step was to organize all publications related to the periods and then connect them with all other references associated with the books, such as concepts (tags) and reviews. Developed mostly by artists and activists, these publications have had a fundamental role in independent and academic research in Brazil.

Our departure was from two independent projects that accompanied us throughout this chronology, adding to our personal and collective production. The first is Midiatatica.info (2003), maintained by Giseli and Tatiana, which gathered the independent art and media projects that launched the tactical media movement in Brazil, sharing a list of publications related to the actions developed for open online access. The other is Desarquivo.org (2011), organized by Cristina, that was produced from another archive, the Archive of Emergency (2005), which organized printed material, projects, researches and key-words associated with Brazilian political contemporary art, art made collectively, community-oriented art or art that reclaimed public space. The concept of 'de-archive' was further developed in her master's research (2008). Both works are part of our personal/collective initiatives to host and share these productions, and as such are also offsprings of our militant online and offline lives.

The chronology we adopted at Arquivos Táticos corresponds to a timeline of nearly 20 years of the internet that we divide by four major periods, analyzing transformations that occurred from roughly three to three years, based on the Brazilian arts, media, and technology networks and their political and social context. It starts from the beginning of the web 2.0 when participatory tools such as IRC, wikis and discussion lists were the main tools, fomenting effective exchanges of information and therefore essential to the launching of new research methods, festivals, encounters, and public debates. At that time, magazines, media articles and blogs announced the tendencies of the internet in Brazil, as Giseli notes:

> *At the interstices [...] some connected networks provoked situations in the social and political domain that mediated behaviors in the digital platforms, politics for the internet and of access, besides politics for the development of culture, aggregating the experiences of mobilization and of innovation of technologies that were directly connected and attentive to the cultural behavior of Brazilians. (Vasconcelos)*

Beginnings and endings

These networks and connected works around digital literacy, recycling hardware, free software, tactical media and critical art did not go unnoticed by progressive politicians that started to be elected around the continent (Evo Morales in Bolivia, Rafael Correa in Ecuador, Lula in Brazil). Especially when many independent groups, hackers and artists started to collaborate (not without internal ruptures) with some governmental projects, to generate initiatives addressing policies for digital culture.[7]

Different genealogies can be traced for this narrative of a possible Brazilian political techno-culture. In our case, the genealogy starts in the period between 2002 to 2003 with the Ação Global dos Povos (People's Global Action or PGA) influence on local media activists through protests such as

the one against ALCA in São Paulo (2001). Simultaneously, the horizontal and politically diverse World Social Forum was being conceived in the south of Brazil. The decade gave rise to festivals that in turn sparked radical and creative uses of technologies such as Mídia Tática Brasil (Brazilian Tactical Media, 2003), Digitofagia (Digitophagy, 2004), Submidialogias (Submidialogies, 2005-2010), platforms such as Estúdio Livre[8] and Desarquivo.org (2005), hundreds of Encontros de Conhecimentos Livres (Free Knowledge Encounters, 2005-2010), and other intersections of activist, arts and media production including immersions, performances and collective creation from libertarian inspiration.[9]

From 2006 to 2009, dissertations and theses engaged with the experience from previous years, marking a transition to the second decade of internet development and thinking in Brazil. This moment also saw the beginning of private social networks and the dissemination of cellphones in the country. Independent initiatives gained traction with programs such as Digital Culture (from the Ministry of Culture) and corporate institutional support, mostly from mobile private communication companies (Vasconcelos). From 2010 to 2013, we see the transition from Lula's government to Dilma's mandate. The Ministry of Culture chosen by this third round of PT in government was Ana Buarque de Holanda, who took off the Creative Commons license from the Ministry site – a mark of the achievements of the previous mandate of Gilberto Gil, generating a tinder for a series of changes regarding the support of the federal government to the digital culture networks. It was around this time that Facebook became the most accessed network in Brazil.

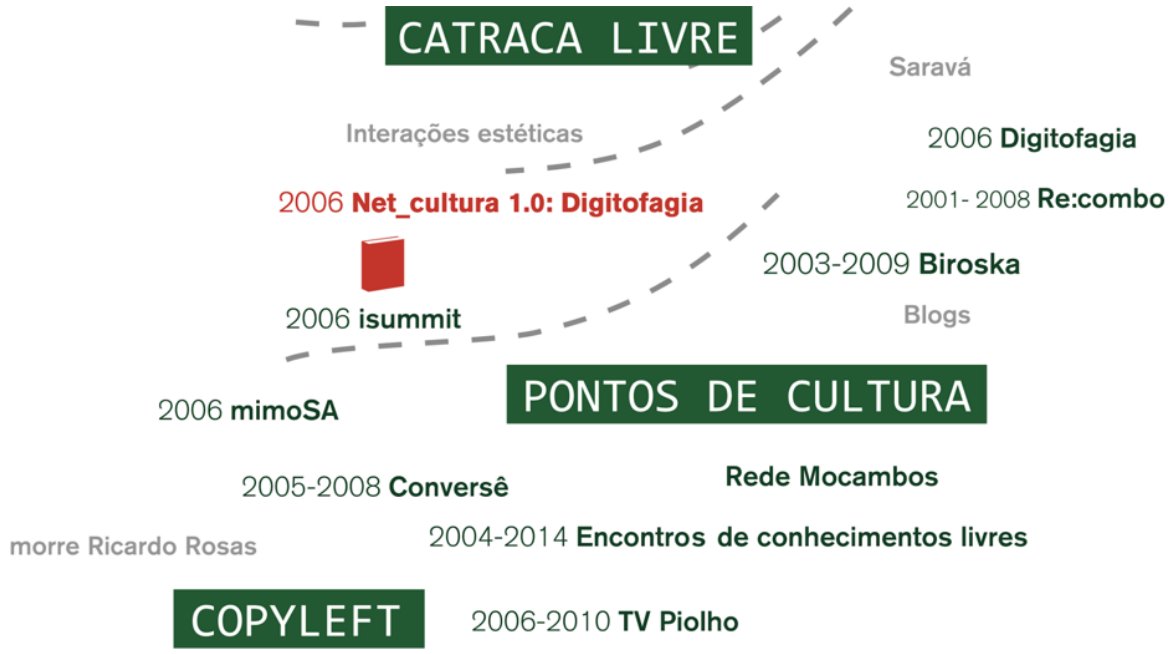
In the final period in our cartography, from 2014 to 2018, the Brazilian government approves the Marco Civil da Internet (Internet Civil Framework),[10] a remarkable bottom-up collaborative process. During this time, smartphones spread throughout Brazil, and Facebook, Twitter and WhatsApp proliferated, becoming the new organisational platforms for civil marches such as Jornadas de Junho (June Jornades), and Primavera Secundarista (The Secondary Spring). The effervescent streets and local mobilizations also signaled a growing disenchantment in the self-made tools, perhaps signaling the beginning of the end of free social networks.

Of course, our focus and problematization of these four periods do not intend to encompass the entirety of online networks from the year 2000 to today in Brazil. Perceptual consciousness gives a predisposition to constituting consciousness (Martinez 229). As such, we prioritize our participation and history within and among groups, projects, and artist collectives as escape routes for reflections around cartography and counter-cartography, archives and de-archiving as a visual collective process, considering the perspective of co-production and articulations between multiple bodies of knowledge, subjectivity, aesthetic production and media.

Reinventeceduras

Another acute part of Tactical Archives is the awareness of the need to de-archive things such as domain names, hosting servers, and external backups. As time goes by, we see documentation disappearing from the web referring to digital addresses that don't exist anymore. Therefore, we started to call this work *reinventeceduras* (reinvent/reweaving) as patches of work, projects and content would be found isolated from each other, works without context.

From a feminist perspective, as ways of thinking and bringing to practice this weaving, we have taken inspiration from feminist



Latin authors as mentioned above, as well as authors situated in studies of subjectivity (Rolnik). Manuela Zechner, Austrian theorist/scholar based in Barcelona, is one of the friends we have been reading. She has been writing about collective processes, care, and micropolitics, generating subsidies, frameworks, and tools to investigate this history. Zechner, attentive to how we can critically reconfigure social reproduction and reproductive labor, refuses to see a separation between forms of thinking networks and our own subjective cartographies and our productive modes. She writes:

> *So what of the seeming disconnect between the network forms that structure our work, relations and economies, and our needs and desires to support, nourish and sustain our lives? Beyond and despite the long list of grievances against networks and their alienating dynamics – as well as beyond certain hyped affirmations of networks that have largely passed – as our everyday relational bases, networks are also spaces of life and of care. The network is the paradigmatic form not just of economic and social organisation in neoliberalism, but particularly in situations of precarity and crisis, where new forms of conviviality, association and organisation are invented despite being attacked (by neoliberalism). (186)*

The co-engendering between our immediate living relationships and our artistic production, software, and media (amongst other day-to-day and global events) produce our subjectivity. The composition of networks, and their way of functioning, have to be directed ethically. The technopolitics that govern our lives and relationships need to be thought of in contrast and opposition to what we have created in the past, and what makes sense to continue developing today — even to what we have left behind, that we can recover in order to go on. Our intention as artists, researchers and archivists is about creating open-ended narratives and making place-memory devices for the sharing of cultural knowledge: a form of re-appropriation for new generations.

The new productive relations that were being rehearsed from the year 2000 onwards did not defend themselves as total collectivization escaping capture (after all, collaboration and participation were also 'pimped' by cognitive capitalism); or, secondly, a reductionist affirmation of a certain process of media immediately as 'art' without mapping the complex richness of these unimaginable articulations. There is a production of value that happens at the singularity of the articulations, that occurs at the ethical symphony of our networks. The listening of our experiences — what was left behind — can now be reactivated to interfere in the present, projecting futures.

Ancestrality, cyclic narratives inspired by radical-border pedagogies, and "open wounds" (Anzaldua) are all markers of our collective history, dramatic and intense, tools for both connection and disconnection, informing the centrality or our body-politics. As such, the reconfiguration of Western concepts such as tactical media and cyberfeminism (that we see that Brazilian feminists were reluctant to adopt, as Tatiana Wells wrote in her text "Cyberfeminism never arrived in Latin America"— can be seen through the immersive formats and ideas of some of these neglected, remade and invented concepts such as technoxamanism[11] and digitophagy.

Particular subjectivities that, most often, abandon completely the use of high-tech gadgets that have become so popular amongst maker spaces and 'fab labs', concentrating instead on low tech, techno *gambiarras* radios, artisan production of zines and, of course, gigs and parties. There were many of these immersive occasions, of people cooking and living together, invoking other symbolic systems such as alliances and poetic fissures, precariously building impermanent structures.[12]

The concepts generated from initiatives developed by networks such as indymedia, midiatatica, metareciclagem, submidialogia, coro coletivo, and tecnoxamanism have helped to build up the tissue of this cartographic *reinventeceturas*. Concepts such as gambiarra, technological appropriation, intellectual generosity, recombination, sevirismo, digitofagia, amongst others were being developed at a certain moment in time corresponding to specific works listed in the bibliography referenced in our archive.

It is crucial to note that although a large number of initiatives were independent and built collaboratively, following the tradition of the free software communities and communal participation, sometimes public and institutional funds have also helped to build a database of works that, for the most part, were not sold but digitally distributed and disseminated through the internet in the form of licenses such copyleft, creative commons, free licenses or even poetic licenses.

Together with the narratives that have been produced, we look as well for material forms of archiving (resources, servers, forms of agency) thinking today conditions. The self-sustainability could not stop demanding for the public structures that were once there. So we ask ourselves which assemblages do these practices institute and differ from in terms of forms and norms to corporate media and networks? And how can those narratives transform and interact with current experiences in the field of art, activism and media?

This cartography, as an ongoing process, will then keep on feeding up forms of producing and approaching to this tactical media stories, attentive to forms of telling and perspectives (racial, class, etc.) that are still emerging, building up the polyphony of this experience and producing knowledge. As feminists, we refuse the narratives that privilege the experience of men in this story, looking for forms of narrative production that

can consider absences and disjunctures, while we understand that it is not necessary to reproduce gender polarisation when we speak of feminism. Recreating our networks, which effectively were never decomposed, we claim for more weaving together of the past and the future, more visual regimes that question, and more theories and practices that inspire and guide.

Notes

[1] Adriana Veloso, Fabiane Borges, Milena Durante, Tininha Lhanos, Inês Nin, Sue Nhamandu, Elisa Ximenes and the three of us.

[2] "Quilombo" (Portuguese pronunciation: [kiˈlõbu]; from the Kimbundu word kilombo, "war camp", a Brazilian hinterland settlement founded by African descendants including the quilombolas, or maroons, and others sometimes called Carabali. Most of the inhabitants of quilombos (called quilombolas) were escaped slaves.

[3] Tactical Media studies such as Rita Raley's book *Tactical Media* and Eric Klutenberg's *Legacies of Tactical Media*, reflect mostly on Western and US practices of tactical media (highly mediated by digital technologies) or from a western perspective (confrontational and overcoming the "problem" of temporality, even as they take the streets). The intersectionality of worldwide tactical media works is a research yet to be done.

[4] "Gambiarra is an improvised amendment to a dysfunctional artefact, normally by the means of its combination with another object. One of the most exemplary gambiarras is the use of wire wool in TV antennas to compensate deficient signal reception." (Menotti, 2010)

[5] Tactical Media Brasil was a festival organized by Tatiana Wells, Giseli Vasconcelos and Ricardo Rosas in 2003 as part of the 4th N5M festival. Rosas, Ruiz and Wells write about the specificities of a Brazilian media practices and the process of organizing the festival *Midia Tática Brasil*, a "call to a new anthropophagy".

[6] The 'metareciclagem movement' is a pedagogical media experiment and a decade of (low-)technological appropriations Site offline, online backup on GitHub. See https://github.com/MetaReciclagem/MetaReciclagem.github.io.

[7] The term "digital culture" when adopted by public policies in Brazil as the mainstream narrative for local new media projects, in a way, de-materializes the pertinence of a "tactics" in the sense of confrontation, re-doing from diverse technological possibilities and knowledge, from what you have.

[8] Estúdio Livre was a pioneer of Brazilian digital culture. In addition to the transmission of online video (streaming) and tutorials of free software multimedia production tools, even before the emergence of Youtube, an innovative platform with Acervo Livre, an online repository with multimedia media files from all the Encontros de Conhecimentos Livres (Free Knowledge Encounters) held in the first points of culture from 2005. The platform is still online but deactivated. See http://estudiolivre.org/tiki-index.php.

[9] Some writers identify at that moment – beginning of the year 2000 - the inauguration, and also a certain type of articulation between art and activism, curating the term

"artivism" (Monachesi). Most of the websites are currently offline, but Arquivos táticos brought back to the internet some publications related to these events: *Digitofagia book*, *Digitofagia Cookbook* (a compilation of the festivals discussion list), *Midia Tatica Brasil poster*, *Submidialogia#3 book* and the *Rizoma* series, from 2002 to 2007.

[10] Known as the "Internet Constitution", law n° 12.965/2014 Marco Civil da Internet regulates the use of the Internet in Brazil by the establishment of consensual principles, guarantees and rights to whoever uses the net, as much as rules for the transparent role of the state in it. Conceived by public debate in 2009 the text was an open collaborative project between different actors of society and the text turned into the law.

[11] Fabi Borges calls the Technoxamanist interventions as "Ontology of Waste" (Sterling).

[12] "The decomposition of social rights and public institutions in times of accumulation by crisis and austerity make it urgent to build networks while at the same time 'hacking' them with care. Is there another way of thinking the network on the horizon, to do with the ways in which we reproduce our lives in relation to each other, in the context of our current impasse? " (Zechner 186)

Works cited

Anzaldúa, Gloria "Mestiza consciousness, and 'feminism of difference.'" *Revista Estudos Feministas*, vol. 13 no. 3, 2005. http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-026X2005000300014. Accessed 1st May 2020.

Apprich, Clemens. "Remaking Media Practices – From Tactical Media To Post-media." *Metamute*, 14 February 2013. https://www.metamute.org/editorial/lab/remaking-media-practices-—-tactical-media-to-post-media. Accessed 1st May 2020.

de la Bellacasa, Maria Puig. *Matters of Care*. University of Minnesota Press, 2017.

Gilroy, Paul. "Civilizacionismo, a "alt-right" e o futuro da política antirracista: um informe da Grã-Bretanha," *Revista ECO-Pós* vol. 21, no. 3, 2018. https://doi.org/10.29146/eco-pos.v21i3.22525. Accessed 1st May 2020.

Klutenberg, Eric. *Legacies of Tactical Media*. Institute of Network Cultures, 2011.

Lovink, Geert; and Ned Rossiter. *Organisation after Social Media*. Colchester. Minor compositions, 2018.

Martinez, Jacqueline M. "Culture, Communication, and Latina Feminist Philosophy: Toward a Critical Phenomenology of Culture." *Hypatia*, vol. 29, no. 1, 2014, pp. 221-236. doi:10.1111/hypa.12061.

Menotti, Gabriel. "Gambiarra and The Prototyping Perspective." June 2010. https://freeze.sh/_/2010/gambiarra/#. Accessed 1st May 2020.

Monachesi, Juliana. “A explosão do a(r) tivismo.” April 6, 2003. https://www1.folha.uol.com.br/fsp/mais/fs0604200305.htm. Accessed 1st May 2020.

Raley, Rita. *Tactical Media*. University of Minnesota Press, 2009.

Ribas, Cristina T. *Arquivo/Desarquivo: condições movimento monotipia*. MA dissertation. Universidade do Estado do Rio de Janeiro, 2008. http://www.ppgartes.uerj.br/discentes/dissertacoes/dismestcristinaribas2008.pdf. Accessed 1st May 2020.

Rosas, Ricardo, Tatiana Wells and Ricardo Ruiz. “Digitofagizando.” *Revista Global*, 2004, pp. 51-53. https://midiatatica.desarquivo.org/2002-2005/digitofagizando/. Accessed 1st May 2020.

Rolnik, Suely. *Cartografia sentimental: Transformações Contemporâneas do Desejo*. Sulina / Editora da UFRGS, 2011.

Sterling, Bruce. “Brazilian technoshamans”, *Wired Magazine*, Jun 16, 2017. <https://www.wired.com/beyond-the-beyond/2017/06/brazilian-technoshamans/> Accessed 1st May 2020.

Vasconcelos, Giseli. *Antes, agora: O que há de vir - memórias e conexões entre arte e cultura de internet*. Unpublished master thesis. Universidade Federal Fluminense (UFF), Rio de Janeiro, Brazil, 2018.

Zechner, Manuela. “A politics of network-families? Precarity, crisis and careful experimentations,“ in Plotegher, Paolo, Manuela Zechner and Bue Hansen. *Nanopolitics Handbook*. Minor composition/Autonomedia, 2010.

Wells, Tatiana. “O ciberfeminismo nunca chegou à América Latina” *Labrys Estudos feministas*, 2005. https://www.labrys.net.br/labrys7/cyber/tatiana.htm. Accessed 1st May 2020.

Iuliia Glushneva

TRANSLATION (DIS)JUNCTIONS, OR POSTSOCIALIST CONNECTIVITY: NETWORK LANGUAGE TRANSFER AND CYBERDUBBING ON THE RUNET

Abstract

This article focuses on language transfer as a fundamental factor in the construction of postsocialist network technosociality. By looking at the early days of the Internet in Russia and the current landscape of the Russian-language cyberspace, it demonstrates that excessive translation activity becomes an essential tool of postsocialist integration with global network economies and cultures. At the center of this activity is voice-over, a form of "half dubbing" and a dominant screen translation practice on the Runet. While this article explores the histories and defining features of performance and labor of this practice, it argues that the voice-over translation is a mode of connectivity that exposes the centrality of asynchrony and distortion to postsocialist networking as well as to the network as such.

APRJA Volume 9, Issue 1, 2020
ISSN 2245-7755

Introduction

In the 1980s and 1990s, the network imaginary, as an essential resource for the post-Fordist information economy and knowledge production, produced a potent repertoire of narratives to guide our understanding and experience of global connections and exchange. By focusing on the global network as a "communication system, increasingly speaking a universal, digital language" (Castells 2), these early narratives foreground the image of fluid connectivity without limits and technological monoglossia of the networking world. Meanwhile, what is seemingly absent or, rather, bracketed off in this account is the immense cultural complexity and linguistic diversity underlying the paths of network adoption and usage, on the one hand, and the network communication on a global scale, on the other. Although not always overtly expressed, this account continues to inform corporate and public discourses surrounding the network technologies, policies, and cultures. Today, it is precisely the search for the universal language code or "interlingua" that guides and dominates the development of communication tools and technologies such as, for example, Google's Natural Language Processing or Neural Translation System (Johnson).

The idea of the global networks as operating through universally shareable protocol and code stands in direct relation to what Michal Cronin calls the "neo-Babelianism" of the current information age and defines as "the desire for mutual, instantaneous intelligibility between human beings speaking, writing and reading different languages" (*Translation and Globalization* 59). The expression and fulfillment of this desire are linked to a range of tactics such as linguistic segmentation of informational flows, politics of translatability that favors easily adaptable and transferable knowledge, and concealment of translation. On the network, while concealment of translation is manifested in the utopian rhetoric around machine translation that seemingly enables momentary and painless communication, it also represents obscuring the conditions of translation labor and lived experience of those who translate. The network explicitly utilizes translation for self-preserving, whether we talk, for instance, about the accumulation of users' linguistic data by memory networks or the volunteer labor for "massively open translation" projects developed by media giants such as Facebook or Wikipedia (O'Hagan 930). Yet, the mundane translational activity remains treated as peripheral in the knowledge production and distribution, translators are subject to the imperative of self-erasure in linguistic transfer, and translations have to be unobtrusive and unnoticeable.

But what happens to the network, this article asks, when these conditions are not met? What senses of translation open up when the politics of concealment fails, and the awkwardness of linguistic transfer breaks through to the network surface? What are the socio-economic lives of communities that consume knowledge and experience the network through haunting translations on an everyday basis? In addressing these questions, this article draws attention to the translation culture developed around and on the Russian internet or Runet. Since the mid-1990s, 'Runet' has been coined as the term used by the general public, academia, and official institutions in Russia in referring to both a "national domain" of the internet and a "language domain, open to Russian-speaking people from all over the world" (Asmolov and Kolozaridi 56). Whereas the analogous "emotive labeling is not common in other national segments of global networks," the introduction of the abbreviation 'Runet' after the dissolution of the Soviet

Union in 1991 suggests the break of Russia with the state socialist governance of network culture (Konradova and Schmidt 35). Currently, the widespread adoption of the term by politicians and legal entities to refer to the websites registered on the territory of Russia points to the growing investment in protecting, administering, and policing the domestic network infrastructure and market. At the same time, the Runet more commonly designates "a social and cultural phenomenon of post-Soviet online communication in Russian, with neither fixed geographical nor technological parameters" (ibid.). Viewed as the Russophone "deterritorialized transnational realm" (Strukov 28), the Runet marks not the break but continuity with the Soviet politics that promoted the Russian language as a lingua franca of most of Eastern Europe and Central Asia and a communicative tool for building the international socialist community. In this way, the Runet also stands for the Russian-language web space(s) to network different parts of the ex-Soviet region as well as Russian-speaking users across the globe.

Nevertheless, the Runet is neither nationally centralized nor linguistically hermetic. It has been inextricably tied into the global network infrastructure and knowledge circulation, which is particularly evident in the centrality of interlinguistic translation to the histories and experiences of the Runet. While this article employs the term 'Runet' to denote both a national and linguistic segments of the internet, it discusses the pivotal role of the Russian-language translations in shaping the extension of network technology in Russia in the 1990s and online distribution of media content on the Russophone web in the 2000s to present. In using the Runet as a case study, the article emphasizes intensive cultural and linguistic translation as an essential factor and effect of networking under the impact of the postsocialist condition. Postsocialist networking, as I define it, represents a highly diverse set of regimes of connectivity that emerge through the complex confluence of socialist legacies/contemporary politics and market liberalization in the post-Cold War era. As we shall see below, the Runet embodies a specific modality of postsocialist networking characterized by the persistence of Soviet cultural practices and by the enhanced need for synchronization with advanced capitalist economies. In the context of the Runet, this need results in acceleration and amplification of translation activity that seems very difficult or impossible to conceal. The translations surrounding the Runet are those intended to guarantee junction and inclusion in the global knowledge culture. Yet, these are translations whose hasty and careless performance also points to the pressure of enduring disjunction and socio-cultural disparity in postsocialist networking.

As this article aims to demonstrate, what reveals the deepest symbolic and material implications of translation (dis)junctions mediating postsocialist connectivity is the phenomenon of voice-over translation, a dominant translation practice deployed to distribute foreign-language video content on the Runet. Called "half dubbing" or "non-synchronized dubbing" (Franco et al. 31), voice-over represents a technique in which the spoken translation is recorded over the original language, such that both language tracks can be heard. Asynchronous and error-prone voice-over, a hallmark of media cultures of the former Eastern bloc, has been seen as an eccentric by-product of the postsocialist socio-technological backwardness. A "farcical and surreal" phenomenon (Chion 145), "a form of cultural barbarism" (Chistruga and Svaneeng) or "translational pornography" (Berdy et al. 58) are the ways to describe postsocialist voice-overs.

Unlike the Web subbing scene that is today considered "a new frontier for transcultural engagement" (Dwyer and Lobato 128),

online voice-over culture and other practices of "cyberdubbing" (154), to borrow Rocío Baños' term, have received scarce scholarly attention. This, in turn, does not correspond to ordinary experiences on the Runet, where, contrary to the majority of global networks, subtitling seems to play an accessory role. On the Runet, it is the noise of numerous split voice-overs that circulates across torrent websites, legal and semi-legal streaming services, and social media. Although the voice-overs are carried out and distributed by multiple actors such as official translation companies, pirates, fans, and random users, it is a particularly difficult task to distinguish between professional and amateur voice-overs as well as between legal and pirate translations. Due to the easy access to sound-editing software and advanced online translation tools, the quality of amateur translations does not significantly deviate from the norms of professional voice-overs. Interestingly, the Runet audiences often prefer amateur voice-overs to professional translations ridiculed by users for ubiquitous distortions and comic localization decisions. Moreover, it is a common practice for translators to independently distribute their translations online and simultaneously work for professional translation companies. Many of these companies, that today regularly hire popular amateur voice-over translators and participate in both official and informal media circulation on the Runet, emerged and flourished as informal translation collectives and agents of pirate distribution. In terms of local copyright culture, it is particularly noteworthy that voice-over translation in itself seems to legitimize informal media sharing. Colloquially known as 'authorial'/'auteur' translation, voice-over is considered as a particular mode of authorship and creative practice that removes the aura of piracy and endows the 'stolen' content with originality. This perception of voice-over translation has a profound effect on the audience's experiences, leading users not just to tolerate the asynchrony, noisiness, and errors typical of voice-over but to find them aesthetically pleasurable and essential for engagement with foreign-language culture.

By looking at the histories, infrastructure, and labor of voice-over translation, this article argues that the Russian-language voice-over culture represents a specific mode of connectivity that stands in conflict with the representation of the network as an agent of fluid and intelligible communication. As a manifestation of the accelerated postsocialist integration with dominant knowledge economies, this culture exposes the mechanisms, effects, and failures of network synchronization. It exposes the centrality of asynchrony and disjunction for the network that operates and expands in the conditions of socioeconomic imbalance, cultural asymmetries, and linguistic hierarchies.

Postsocialist Networks: (Dis)connecting Translations

Since the early 1970s, the network techno-sociality has been considered a fundamental resource of restructuring of contemporary capitalism and an organizing principle of neoliberal policies. As a decentralized and flexible structure, the network seems doomed to failure in the stifling atmosphere of the hierarchical bureaucracy of the Cold War socialist regimes. The emphasis in historical accounts is often on socialist networks as unsuccessful technological projects like the All-State Automated System (OGAS) in the Soviet Union, a prime example of "how not to network" (Peters 2016). Or, on the contrary, socialist networks seem to be productive,

but legally and morally dubious, capillary infrastructures of the shadow economy, black markets, samizdat distribution, and piracy.

Relkom, the first computer network in Russia, was launched in 1990 and jokingly stood for "*re*al *com*munism" (Konradova and Schmidt 39). In the same year, Russia was connected to the Internet via the domain *.su*. Nevertheless, the dissolution of the Soviet Union in 1991 was taken as a starting point in the development of network culture in the country, and the early Russian netizens "perceived the fall of the Iron Curtain and the discovery of cyberspace as being intimately linked" (ibid. 35). In Russia, the network not only marked and facilitated the transition to capitalism but was also viewed as a key achievement of the capitalist revolution and an imported gift from the West. The history of Soviet network experiments and computer industry, in turn, fell victim to "Russian techno-cultural amnesia" (Strukov 28).

The political manipulation of the memory of communism and the distrust of left-wing politics associated with the totalitarian past have turned, according to Liviu Chelcea and Oana Druta, ex-socialist cultures into "a particularly strong version of neoliberalism" (17). However, the hypertrophy of neoliberalism in these cultures, and in Russia in particular, is not simply an enthusiastic acceptance of the norms and values of late capitalism. Rather, postsocialist capitalism is an agony of compulsive synchronization with the global neoliberal order under conditions of socio-economic and organizational asymmetry. The redundancy of postsocialist capitalism consists in the scale of human and material resources to compensate for this asymmetry and in the distinctive regulatory mechanisms and forms of labor engendered by the dictate of structural consensus.

The network, as both a foundational model and major technology for synchronization, has become the cornerstone of the postsocialist game of catch-up. Participation in the global network culture has turned out to be identical to proper integration into the neoliberal regime. Meanwhile, the trajectories of this participation often reflect the foundational paradox of digital networks – "the more we participate in them, the more inequality and disparity they produce" (Mejias 3). By promising instantaneous communication and thriving on "the breaking down of the rhythms, either biological or social" (Castells 476), the network does not cancel real-world asynchrony and uneven patterns of participation. Instead, while the network enforces monoglossia and coevalness as conditions of productive connectivity, it produces intense competitiveness and precarity.

The continuing process of postsocialist synchronization within and outside the network is an act of translation with its compromises, errors, temporal lag, and reputation of being derivative or even parasitical. It is the translation, both as cultural localization and linguistic transfer, that underlies the building of "postsocialist global collectivity" and serves as a fundamental postsocialist medium of "forging of common time" within the digital present (Starosta 204, 205). Equally, translation becomes an essential driving force behind the development of the network infrastructure and the Runet culture imagined as what "breached borders and brought down political walls in the spirit of political transformation" (Asmolov and Kolozaridi 66).

Symbolically, translation as localization engineering becomes the basis of the Russian electronic modernity. The massive import of computer systems since the late 1980s spawned an army of engineers actively involved in the technical redesign of imports and Russification of software. Meanwhile, among the emblematic electronic devices of the early network culture in Russia were not only computers available for a limited number of citizens. In the 1990s and 2000s,

a pocket translator is a coveted device and indispensable assistant in the context of drastically enhanced communication with the outside world and abundance of information flooding into all areas of life through foreign goods, texts, and images.

While computerized networks facilitated this acceleration of information flows, their architecture, representation, and public image developed through the offline distribution of knowledge. The 1990s became the most flourishing period in the development of Russian computer journalism heavily influenced by the North American computer press. By 1983, there were more than two hundred computer magazines in the United States ("Boom in Computer Magazines"), and later on, many of them, such as *Byte*, *Computerworld*, or *Network World*, began to be published in large print runs in Russia. The published material was composed almost exclusively of the articles translated into Russian (Kuzmin), and it was common to find only four pages written by local authors in a 100-page magazine (Strelchenko). In both popular and specialized press, the spread of information about computer and network technologies, in fact, lay on the shoulders of anonymous translators.

The emergence of computer journalism accompanied a boom in translations of academic and technical literature along with popular books such as *Internet for Dummies*. Translators were faced with a hardly feasible task to translate the amount of knowledge and information in the field of cybernetics, computer technology, and network studies produced in the West during the Cold War up to date. In the Soviet period, the All-Union Translation Center and the Institute of Scientific and Technical Information actively translated and published Western computer literature with slight delays (Gerovitch 144). However, since Soviet translations represented shorter and censored texts supplemented by numerous comments in the spirit of Marxism-Leninism and were especially skeptical of mind-machine analogies, a cornerstone of the network imaginary, they lost their relevance in the post-1991 era. The relevance and quality of the post-1991 Russian translation carried out in haste and under the pressure of never-ending technological upgrade turned to be no less problematic. This translation was often portrayed as a "spontaneous, uncontrolled process" and blamed for giving rise to "terminological confusion, inaccurate formulations, and ugly barbarisms" (Shturts 66). In the 2000s, the Russian-language translation was recognized as one of the factors that slowed down the timely integration of Russia into the environment of computer and network innovations and contributed to the ongoing misunderstanding among the local specialists. Employed to connect, translation into local language simultaneously resulted in disconnection (see fig. 1).

Figure 1: A Russian magazine cover referring to article "IT-Terms: Lost in Translation." *Computerra*, no. 15, 2006.

Meanwhile, emerged in reaction to the chaotic and linguistically incomprehensible Web, the Runet developed online as the Russian-language "samizdat, archive, and library" and "in complete accordance with literature-centric traditions" (Kuznetsov 11, 73). In the Runet vortex of classical literature, amateur poems, esoteric books, and other textual content, translations were ubiquitous. Circulation of professionally translated texts, anonymous adaptations, commentaries, and summaries of foreign-language content was happening along with the formation of translation communities and the development of local online translation services. The translation was present on the Runet, but it was not until the arrival of high-speed unlimited access in 2004 that it obtained actual visibility. The fast Internet speeds brought about the unstoppable cross-border video streams. Paradoxically, not texts but images placed language transfer at the heart of the network life.

Cyberdubbing on the Runet: Voice-Over Translation

The rapid expansion of the Internet has coincided with the decline of the logocentric privileging of language, and it might seem that "meaning has evaporated as the main point of reference" within the network driven by "the *power of affection* of images" (Terranova 13, 142). Nevertheless, the content, alphabet, and sound of human language remain essential factors in the regulation of trajectories and speed of image flows and shaping the sensory experiences of the network spectacle. The global image circulation is a cacophony of languages that bypass each other, clash in rivalry, and swiftly merge in the chaos of translation performed by people and machines.

In this cacophony, the Runet represents only a semblance of language enclave. By accumulating the dizzy multilingual flows, it exists as a gigantic translation engine that adapts and circulates moving images through quick and cheap cyberdubbing practices. Among them is voice-over that, in contrast to ventriloquism of regular dubbing, allows both the original speech and spoken translation remain audible, thereby highlighting the very presence and machinery of the linguistic transfer. Despite its obtrusiveness, voice-over is a primary translation technique on the Runet and an alternative to both subtitling that plays a marginal role in the local media history and time-consuming dubbing that requires lip synchronization.

Originated in the Soviet Union (Franco et al. 24, 47), voice-over is an integral part of (post)socialist aesthetics, cultural politics, and institutional routines. Most conventional narratives, both academic and popular, view it as a practice emblematic of rampant Russian video piracy in the 1980s and 1990s, a period when videotapes with pre-recorded foreign media poured into the country. In the VCR era, voice-over translators (mostly males) played the role of simultaneous interpreters who recorded their single-voice, improvised, barely synchronized translations directly to videotapes.

Portrayed as "a symbol of the capitalist transition's contradictions" (Chistruga and Svaneeng), this practice, however, had been officially incorporated within the Cold War culture of information exchange and media entertainment. Simultaneous interpreting, a source of Soviet pride and a revolutionary mechanism for building a global socialist community, is believed to be first introduced at the 6th Congress of Communist International in Moscow in 1928 (Gofman 20), or later, as a wired system of headphones

and microphones, at the 15th International Congress of Physiology in Leningrad in 1935 (Gaiba 31). After the Nuremberg Trials in 1945-1946, the wired system of interpreting manufactured by IBM becomes widely adopted in the world.

Meanwhile, in the USSR, this technique of translation migrated from the places of international gatherings and courtrooms to movie theaters. Since the 1950s, the offhand speech of a translator, emotionally detached in accordance with the interpreting standards, became "a key element of the foreign-film sound track throughout the Soviet Union" (Razlogova 162). Later on, this practice was adapted for television screens as voice-over to equally translate international news, commentary programs, and popular genre of Latin American telenovelas. Even when not performed simultaneously, voice-overs stressed immediacy and unscriptedness, which was in great demand among the audiences bored by carefully staged and static Soviet television (Evans 114-128). Today, voice-over, which implicitly blends the protocols of international communication and media pleasure as well as points to liveness and authenticity of entertainment, remains a dominant method to officially distribute foreign-language television content.

In this regard, as integrated into the overlapping histories of institutionalized and informal media consumption, voice-over on the Runet does not fully embrace the prevailing view on "cyberdubbing" as humoristic or subversive fan activity or an "effective tool for the expression of discontent" (Baños 163). Although some translators deploy it for parodic purposes, voice-over in Russia is a mundane cultural ritual that serves as a particularly effective adaptive strategy in the context of the asymmetrical information economy of the network.

At first sight, it might seem that on the network voice-over exists exclusively in the realm of informal media distribution. Indeed, one of the largest online collections of the VHS, televisual, and newly created amateur voice-overs is a torrent website RuTracker, whose vast community usually considers subtitles as an additional option and tolerates only the dubs made for children's animation films. Using translation as a shield from international copyright control, RuTracker prohibits the exchange of non-translated visual media and the inclusion of any languages other than Russian in descriptions. While the netizens share both sound files with their voice-overs, RuTracker has its translation studio that accepts orders and provides users with free or paid voice-overs of higher quality. Contemporary voice-overs usually represent pre-recorded and more precise translations, although asynchrony, discord, errors, and use of a limited number of voices (one or two) remain characteristic of this practice in the cyberspace.

Recently, although torrents have managed to retain their popularity with the online users, public attention has moved to semi-legal streaming platforms that mushroomed within the Runet. "The allure of streaming," as Tessa Dwyer and Ramon Lobato point out, "is that everything is already built into the platform" (139). A clear advantage of Russian informal streaming services compared to torrent sharing is not simply the integration of translation into the platform apparatus. The key feature of these services is the possibility to choose among the multiple voice-over versions simultaneously available via platforms (see fig. 2). Uploaded under the names of numerous translation studios or so-called 'release-groups,' these translations differ in their style of performance and reputation among the fragmented audience whose tastes and expectations not always coincide. The immediate access to multiple translations allows informal streaming services to outpace not only the torrent websites but

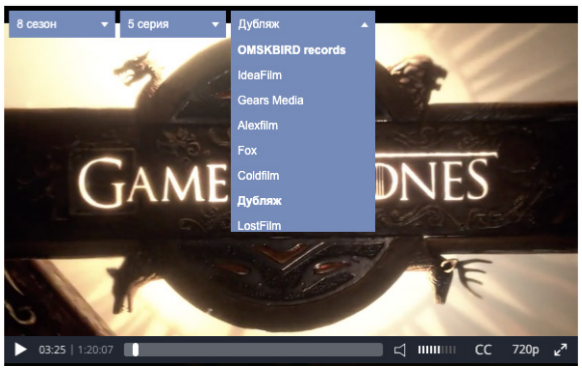


Figure 2: One of the Runet informal streaming services offers to choose among eleven translation versions to watch HBO's *Game of Thrones*.

also official distributors. As a rule, the latter provide viewers only with subtitles and one voice-over or dubbed version produced at their corporate studios.

It is common for independent translation companies to launch their own free streaming websites, which helps them build a strong fan base and interact with users. Among them is *LostFilm*, one of the oldest providers of voice-over on the Runet since 2004. The studio began with translation of the second season of an American TV series *Lost* (hence the studio's name). Carried out by the founder Andrei Kravets, that first amateur single-voice translation was aimed at the Russian public eagerly waiting for a return of the show. While the local TV channels remained paralyzed by negotiations with the ABC distributors and strict copyright requirements to officially release *Lost*, the sequel was quickly leaked all over the Runet in Kravets' translation. Today, *LostFilm* represents one of the most successful informal studios known for its big collection of translated TV series and cherished by fans for high-quality performance and 'soft' approach in translating offensive language.

Another noteworthy example is a release-group *Kuraj Bambey* created by Denis Kolesnikov in Tolyatti in 2009. Kolesnikov first translated a few episodes of *The Big Bang Theory* for his mother, who wanted to watch "something new," and then put them on the Internet. Suddenly, the sitcom which the Russian audience had never been familiar with topped online searches due to the humorous and witty voice-over. Contrary to *LostFilm*'s emotionally ascetic and precise style, Kolesnikov is highly visible in his translations due to signature jokes and phrases and masterly changes of timbre in revoicing of different characters.

Although the release-groups, such as *LostFilm* and *Kuraj Bambey*, play a crucial role in the circulation of unlicensed media, they are also important players on the market of legal distributors, not always explicitly though. Official TV channels and online video services often collaborate with the amateur studios or their independent translators and voice artists, while they tend to avoid giving publicity to the fact of partnership. So, in *Game of Thrones* or *Breaking Bad*, officially distributed by the largest local streaming service *Amedia*, one can easily recognize some familiar voices circulating across informal translations made by *LostFilm*. Meanwhile, Kolesnikov from *Kuraj Bambey* has become a star voice on a few popular TV channels. In January 2020, he signed a contract with the leading network and IPTV provider Rostelekom – Kolesnikov will translate twenty films and three TV series for the company (Istomina).

Whereas this complex interplay between formal and informal distribution networks unfolds on the battlefield for the U.S. 'quality television' products, there is a curious segment of numerous voice-over communities that seemingly stand away from it. These are outwardly inconspicuous small translation groups based on the local social media, such as VKontakte, which hosts multiple genres of entertainment content. Among these communities are *SezdiZi*, a highly influential voice-over group specialized in translation of Turkish films and TV

dramas, or *om_ocean_of_wisdom*, translators of Hindi language mythological serials and religious videos, or *Sexy Channel*, a studio of voice-over translation in the genre of erotica. Unlike the more fluent voice-overs of mainstream release-groups mimicking the television norms, the translations performed by these communities remain blatantly out of synch, sloppy and inaccurate. However, the aesthetic 'flaws' do not invalidate these voice-overs that redress the distribution gaps and provide access to content unavailable through other channels because of such interconnected factors as linguistic obstacles, unprofitability, and lowly status within the taste hierarchies.

Voice-Over Labor: Cultural Elites or Network Precariat?

Within the network universe, language diversity and demand of translation represent an unsettling truth that destabilizes the myth of borderless, instantaneous, and intelligible communication. In attempting to preserve the comforting illusion of seamless and sustained contact, the network reinforces what Lawrence Venuti calls the "translator's invisibility": an ideology that underwrites the norm of translator's self-erasure in linguistic transfer and ambivalent status of translators as second-class citizens alienated from the product of their labor (8-10).

In this regard, given the specificity of voice-over performance and tremendously tangible presence of voice-over translators on the Runet, the Russian-language cyberdubbing culture offers a radical challenge to the politics of invisibility. At the same time, while this culture places translators at the forefront of public life and endows them with exclusive authority, it continues to reproduce the inequalities and precariousness of translation labor. It exposes but does not alleviate "what is devalued or ignored in the cyberhype of global communities," namely "the effort, the difficulty and, above all else, the time required to establish and maintain linguistic (and by definition, cultural) connections" (Cronin, *Translation and Globalization* 49).

In Russia, the term 'voice-over' is often used interchangeably with the concept 'authorial translation,' which refers to a tendency to perceive a voice-over translator as a genuinely creative and artistic figure. This attitude stretches back to the practice of simultaneous film interpreting and the days of VCRs when many translators achieved the celebrity status comparable to that one of popular actors or musicians (Gorchakov). The effects of the tireless work of translators, who could have translated up to as many as seven videotapes per day (Dolsky), were on the surface of video spectacle and manifested in numerous mistakes, trembling voice, hoarseness, and gasping. The endeavors of translators were portrayed as "work on the inspiration," and the translators' "enormous expenditures of nervous energy" in conditions of fast production and omnivorous media consumption seemed romantic (Berdy et al. 53).

Although not to such an extent, the domain of cyberdubbing on the Runet is encompassed with the same heroic aura. The amount of media content in all languages grew 67 times from 2001 to 2012, while the number of professional Russian-language translators grew by only 30% (Kozulyaev). In the digital loop, technology simultaneously allows compensating for this disproportion by providing an opportunity to use machine translation and rerecord and easily edit sound, which, in fact, creates what Cronin calls "translational cyborgs" (*Translation and*

Globalization 112). However, working within the atmosphere of enduring information oversaturation and socio-cultural asymmetries, the translational cyborgs cannot get rid of the sense "of never doing enough fast enough" (Cronin, *Translation in the Digital Age* 94). In this context, voice-over translators retain their missionary reputation and the role of cultural mediators, and their raw error-prone and half-synchronous translations become a mark of their efforts. Viewers tolerate, get used to, and appreciate them as valuable aesthetic and cultural forms integral to their everyday experience.

On the Runet, the VHS translators remain iconic authors, and their labor is paid by users who usually order their voice-overs through *RuTracker* and donate money. The translations made in previous years circulate freely across the torrent websites. In turn, the average cost of a newly translated film from one of the stars is about 7,000 rubles (US$130), which includes the linguistic translation, vocal delivery, and post-synchronization. It is the highest price on the network, and it is also the cost of voice-over produced by professional companies. Most of the cyberdubbing labor, however, remains free and hidden behind the collective 'brand' names of release-groups.

It is noteworthy that, although the figures of translators and voice-over artists still tend to coincide, many big translation collectives invite additional performers not involved in the process of translation *per se*. This division of labor, typical of industrial production, results from the fact that the overwhelming amount of linguistic work that translators perform not always leaves them time for voice acting. Besides, this deals with the intention of some collectives to diversify the acoustics of their translations with the help of the artists whose gender, age, and vocal characteristics (e.g., pitch) match speakers on the screen. Meanwhile, in the public imagination, the translator and voice artist remain the same person, and translators gain a significant part of their cultural capital from the voices the viewers get intimately attached to. Equally, the original star persona whose body and, more importantly, voice are present becomes the incarnation of the translator, and vice versa. In this phantasmagoric symbiosis, the audience's love, anger, interest, or indifference towards both characters and texts depend not only on the screen action but also emerge from translation.

Due to their status of missionaries carrying the world culture to hungry audiences and affective power of their performance, the voice-over translators seem to belong to the digital elite of the Runet. Yet, while they occasionally receive voluntary donations from grateful fans or support themselves through the integration of ads of online casinos, the translation communities do not reap direct monetary rewards for their translations. Even big popular release-groups, such as *LostFilm* or *Kuraj Bambey* mentioned above, describe their activity as "work for pleasure" or "hobby" and consider online voice-overs as promotion for their offline studios carrying out translations on a by-order basis. In the offline world, the voices of cyberdybbers sound behind Saint Petersburg's subway announcements, in TV commercials for Sprite, or at corporate parties where dubbers perform the role of showmen and amuse the public. These are alternative sources of income translators get access to due to their strategy to use the online activity as advertising for their voices and public image.

"Free labour," as Terranova points out, "is not necessarily exploited labor" (91). Indeed, online voice-over culture might look on the surface like space to simply share knowledge, exchange information, and communicate in bypassing market regulations, predatory pricing, and cultural asymmetries. Nevertheless, enmeshed into affective

economies and intensified by postsocialist pursuits for proper inclusion, voice-over production simultaneously replicates exploitation and highlights power imbalance. While they manage to capitalize on online popularity and expand their influence outward, successful release-groups recruit "enthusiasts" galvanized by a desire to participate in voice-over culture.

Small release-groups and independent translators often play the function of 'testers' here. Their translations suddenly disappear from the network and are replaced by voice-overs from official distributors or big informal release-groups, if the latter see an interest among the audiences. On the Runet male-dominated voice-over scene, the mass involvement of female translators remains invisible, and women are pushed to what can be seen as peripheries of the Runet. These peripheries represent enclaves for distributing media made in other languages than English and not produced by major conglomerates.

In the highly hierarchical voice-over culture that reinstates real-world socioeconomic, cultural, and linguistic inequalities, translation production turns out to be more than a neutral mechanism of access to knowledge. The voice-over scene of the Runet reflects the postsocialist struggle for liberation from alleged provincialism and for integration into the core of the global cultural economy. While both the Runet translators and consumers continue to benefit from voice-over culture, this culture simultaneously demonstrates that the struggle over inclusion requires an investment of immense human resources, triggers self-exploitation, and produces additional levels of disproportionality. If these conditions are not immediately evident, their effects manifest in uneven voices and broken languages of quick and inaccurate translations that mediate everyday lives and connections on the Runet.

Works Cited

"Boom in Computer Magazines." *New York Times*, 9 Nov. 1983, www.nytimes.com/1983/11/09/business/boom-in-computer-magazines.html. Accessed 10 March 2020.

Asmolov, Gregory, and Polina Kolozaridi. "The Imaginaries of RuNet: The Change of the Elites and the Construction of Online Space." *Russian Politics*, no. 2, 2017, pp. 54-79.

Baños, Rocío. "Fundubbing Across Time and Space: From Dubbing 'By Fans for Fans' to Cyberdubbing." *Reassessing Dubbing: Historical Approaches and Current Trends*, edited by Irene Ranzato and Serenella Zanotti, John Benjamins Publishing Company, 2019, pp. 145-168.

Berdy, Michele, et al. "Кинoперевод: мало что от Бога, много чего от Гоблина" [Film Translation: There is Little from God, Much from Goblin]." *Mosty*, vol. 8, no. 4, 2005, pp. 52-62.

Castells, Manuel. The Rise of the Network Society. 1996. Wiley-Blackwell, 2010.

Chelcea, Liviu, and Oana Druta. "Zombie Socialism and the Rise of Neoliberalism in Post-socialist Central and Eastern Europe." *Eurasian Geography and Economics*, vol. 57, no. 4-5, 2016, pp. 1-24.

Chion, Michel. *Words on Screen*. Translated by Claudia Gorbman. Columbia University Press, 2013.

Chistruga, Vladislav, and Jacob Svaneeng. "The Curious Tale of the Soviet Voice-Over." *Jacobin*, 18 Jul. 2017, jacobinmag.com/2017/07/soviet-voice-over-cold-war-technology. Accessed 10 March 2020.

Cronin, Michael. *Translation and Globalisation*. Routledge, 2003.

____. Translation in the Digital Age. Routledge, 2013.

Dolsky, Andrei. "Хроники видика: легенды эпохи VHS. Первая серия [Video Chronicles: Legends of the VHS Epoch, Part One]." *YouTube*, uploaded by svyat_svyat, 14 Oct. 2018, www.youtube.com/watch?v=bLXtum_xY_Y.

Dwyer, Tessa, and Ramon Lobato. "Informal Translation, Post-Cinema and Global Media Flows." *The State of Post-Cinema: Tracing the Moving Image in the Age of Digital Dissemination*, edited by Malte Hagener, et. al., Palgrave Macmillan, 2016, pp. 127-145.

Evans, Christine E. *Between Truth and Time: a History of Soviet Central Television*. Yale University Press, 2016.

Franco, Eliana, et al. *Voice-Over Translation: An Overview*. Peter Lang, 2010.

Gaiba, Francesca. *The Origins of Simultaneous Interpretation: The Nuremberg Trial*. University of Ottawa Press, 1998.

Gerovitch, Slava. *From Newspeak to Cyberspeak: A History of Soviet Cybernetics*. MIT Press, 2002.

Gofman, Evgeni. "К истории синхронного перевода [On the History of Simultaneous Translation]." *Tetradi Perevodchika*, no. 1, 1963, pp. 20-26.

Istomina, Maria. "Кураж-Бамбей озвучит фильмы и сериалы для Ростелекома [Kuraj Bambey Will Voice-over Films and TV Series for Rostelekom]." *Vedomosti*, 29 Jan. 2020, www.vedomosti.ru/media/articles/2020/01/29/821716-kurazh-bambei. Accessed 10 March 2020.

Johnson, Melvin. "Stanford Seminar: Google's Multilingual Neural Machine Translation System." *YouTube*, uploaded by stanfordonline, 9 March 2017, www.youtube.com/watch?v=nR74lBO5M3s&list=PUBa5G_ESCn8Yd4vw5U-gIcg&index=104&app=desktop.

Konradova, Natalya, and Henrike Schmidt. "From the Utopia of Autonomy to a Political Battlefield: Towards a History of the Russian Internet." *Digital Russia: The Language, Culture and Politics of New Media Communication*, edited by Michael S. Gorham, et. al., Routledge, 2014, pp. 34-54.

Kozulyaev, Alexei. "Как переводят фильмы, игры и сериалы [How We Translate Films, Games, and TV Series]." *VC.ru,* 7 Aug. 2017, vc.ru/story/25642-translation-business. Accessed 10 March 2020.

Kuzmin, Yuri. "Юбилей с оттенком грусти: книги и компьютерная пресса" [Anniversary With a Touch of Sadness: Books and Computer press]." *Russian Virtual Computer Museum*, www.computer-museum.ru/articles/istoriya-kompyuternoy-pressy/2277/. Accessed 10 March 2020.

Kuznetsov, Sergei. *Ощупывая слона: заметки по истории русского Интернета* [Touching the Elephant: Notes on the History of the Russian Internet]. NLO, 2004.

Mejias, Ulises Ali. *Off the Network: Disrupting the Digital World*. University of Minnesota Press, 2013.

O'Hagan, Minako. "Massively Open Translation: Unpacking the Relationship Between Technology and Translation in the 21st Century." *International Journal of Communication*, no. 10, 2016, pp. 929-946.

Peters, Benjamin. *How Not To Network a Nation: The Uneasy History of the Soviet Internet*. MIT Press, 2016.

Razlogova, Elena. "Listening to the Inaudible Foreign: Simultaneous Translators and Soviet Experience of Foreign Cinema." *Sound, Speech, Music in Soviet and Post-Soviet Cinema*, edited by Lilya Kaganovsky and Masha Salazkina, Indiana University Press, 2014, pp. 162-178.

Shturts, Igor. "Вложу ибуксы в куки [Adding E-books to Cookies]." *Computerra*, 18 Apr. 2006, pp. 66-69.

Starosta, Anita. "Perverse Tongues, Postsocialist Translations." *boundary 2*, vol. 41, no. 1, 2014, pp. 203-227.

Strelchenko, Yuri. "Мир ПК – 20 лет назад. Годы 1988-й, 1989-й [PC World – 20 years ago, 1988-1989]." *PC World*, 19 March 2008, www.osp.ru/pcworld/2008/02/4885936/. Accessed 10 March 2020.

Strukov, Vlad. "The (Im)personal Connections: Computational Systems and (Post-)Soviet Cultural History." *Digital Russia: The Language, Culture and Politics of New Media Communication*, edited by Michael S. Gorham, et. al., Routledge, 2014, pp. 11-33.

Terranova, Tiziana. *Network Culture: Politics for the Information Age*. Pluto, 2004.

Venuti, Lawrence. *The Translator's Invisibility: A History of Translation*. 2nd ed., Routledge, 2008.

Wenhao Bi

ASSEMBLING VIA 'DANMU': THE PLAYFUL NETWORKS OF BILIBILI

Abstract

The 'danmu' system in the Chinese video-sharing social media platform Bilibili, in allowing comments to sync to any specific playback time, has constructed a community where separated viewers can join in the seemingly simultaneous conversations at the same time they watch videos. The participatory design of such co-presence demonstrates the political and cultural gesture of speaking out and exchanging ideas as the main orientation of the platform. Through danmu comments are the living networks connected both in the videos they are attached to, and in Bilibili as a whole. Despite the instantaneous emotions displayed in individual danmu comments, there are affective connections that shape the temporal quality of participation. The playfulness embedded in the interface design has further directed the gratification of speaking out on the platform.

APRJA Volume 9, Issue 1, 2020
ISSN 2245-7755

The danmu commentary function was competitively trialled in different media architectures such as cinema and mainstream video platforms in China in 2014 due to its commercial value (Chen et al., "Understanding Gratifications" 153–54; Wan et al. 1; Cao). With the literal meaning of 'bullet curtain', danmu allows numerous comments to fly over the video from the right to the left as it plays. Currently, the danmu function is best performed on the Chinese video-sharing social media platform Bilibili among its millions of monthly active users. In other words, connectivity is established both through videos and danmu comments. What then are the cultural and political concerns and potentials around such a socio-technical setting?

Unpacking danmu in Bilibili

The essence of the danmu function is attaching text to a specific playback time in the video. Unlike the general impressions and post hoc reflections in the bottom half of a webpage, detailed and specific information can be conveyed on the video screen through this function (Chen et al., "Watching a Movie Alone yet Together" 732). Hence it is generally used by users for feedback on or as annotations to the video, be it their instantaneous emotions and feelings (Chen et al., "Watching a Movie Alone yet Together" 732), for amateur subtitles (Yang), for the sharing of explicit knowledge such as the background music (Wu et al. 20), or for the addition of their own phrases, codes and symbols (Wan et al. 15).

Bilibili's origin as a part of the otaku ecosystem fostered around anime, comic, game and novel (ACGN) is culturally connected to the danmu function (Zheng). The richness in cataloguing, storing and displaying vocabulary, music and other cultural elements in the ACGN community grounds the accumulation and circulation through danmu, echoing Azuma's understanding of the "postmodern database model" (Azuma 31–32; Chen; Chen et al., "Understanding Gratifications"; Zheng). It has also grounded the gatekeeping of posting danmu comments which requires users to have passed the membership test with 100 questions "covering ACGN knowledge, etiquette regulations and good practice on Bilibili" (Chen, pt. Exclusivity strategies). In other words, the abundance of niceness-oriented danmu comments is culturally and technically embedded in the 'purity' of the Bilibili community. After its transformation into an incubator for the wider youth culture (Xu 443), Bilibili has extended its coverage to a variety of popular culture genres such as films, TV series and documentaries (Chen), yet the shared preferences around danmu comments have continued on the platform.

Unlike the membership restriction in posting danmu comments, viewing videos and danmu comments is unlimited. The flying comments are taken as a secondary but unique layer that reminds viewers of the existence of others despite the physical separation (Wan et al. 4). While the feeling of 'alone yet together' can be elaborated from a textual perspective that emphasises the gratification of meeting the utilitarian needs such as learning, hedonic needs such as relaxation, and social needs such as avoiding loneliness and keeping up with the peers (Chen et al., "Watching a Movie Alone yet Together" 733), the juxtaposition of the video and the comments also gestures towards a conflation of the visual experience since the two components are taken as a whole in multitasking scenarios such as subtitles for cross-language videos (Yang 271). Danmu comments in this light not only mediate the knowledge and information related

to the video, but also deliver a 'stream of consciousness' shaped by the embodiment in visual perception (Liu et al. 284; Johnson 308). In other words, the viewing experience with danmu comments comes from both the separation and collision between video and its comments (Li 244).

Considering Bilibili's marketing strategy, there seems to be an inconsistency or ambiguity with viewers attracted to engage with the danmu function on the one hand and the overlapping comments obstructing a full comprehension of video content on the other (Wan et al. 2). However, the communicative interactivity is highlighted within the 'curtain' interface that "operates against a transparent access to media content" and lies between visibility and invisibility (Li 237), and is facilitated by the layout of Bilibili's video page and its default settings. Similar to the platform-as-delivery vein that emphasises visual transparency with "full-screen aesthetics" (Steinberg 185, 191), Bilibili weighs its video contents over other textual information by placing the video player as the key element in the browser window. It holds around 40% above the scroll before switching to the full screen mode with a toolbar for danmu control and a text field for posting comments. Contrary to the dominance of video-related contents is the marginalised textual information outside the video player. Only the first 3.5 lines of the video description is shown below the video player with the remaining to be unfolded with a button. Similarly, a three-column list that stores the times each danmu comment is sent, the commentary texts and the playback times they synched to is folded by default to the right of the video player. In short, the video player is the designated 'field' where interactivities take place.

Posting danmu comments can be simplified as interactions upon a canvas where the video image is projected (Johnson 303), yet the cultural and technical boundaries have discouraged certain practices. The membership test, for example, has filtered out bots and suppressed the trolling potential due to its knowledge threshold of the community's culture and etiquette. Another example is the five-second display time of each danmu comment that shapes the tendency of posting the immediate feelings and reactions rather than structuring them into long sentences (Zheng). These settings have guided the transgressive momentum so that members are socially connected and creatively engaged to enjoy and challenge the culture interpretatively and expressively (Zhang 2, 5). A sense of belonging to a community is also formed under the shared standard in posting danmu comments.

The storage capacity for 'real-time' danmu comments in one video is based on the video length. For example, 100 comments are allowed to be shown on the screen for a video that is no longer than 30 seconds, and instead of blocking the comment entry, the oldest comment will be stored in the server as an 'invisible' record to give its way to the latest one when the limit is reached. While such a design can be culturally and politically interpreted in terms of openness and equality since the comments are not judged with 'likes' or 'dislikes', the openness and equality cannot last long as the first-in-first-out regulation indiscriminately removes the earliest comment. Hence danmu comments can be seen as an adapted version of graffiti with playfulness since different layers pile up ephemerally.

The anonymity of graffiti is also shared in the danmu comments with the aesthetic and communicative preference of prioritising texts and precluding authorship (Chen et al., "Watching a Movie Alone yet Together" 732). It has therefore shaped an immersive experience of encountering comments from nowhere by somebody in a vague past. This is where Hamano Satoshi coined the

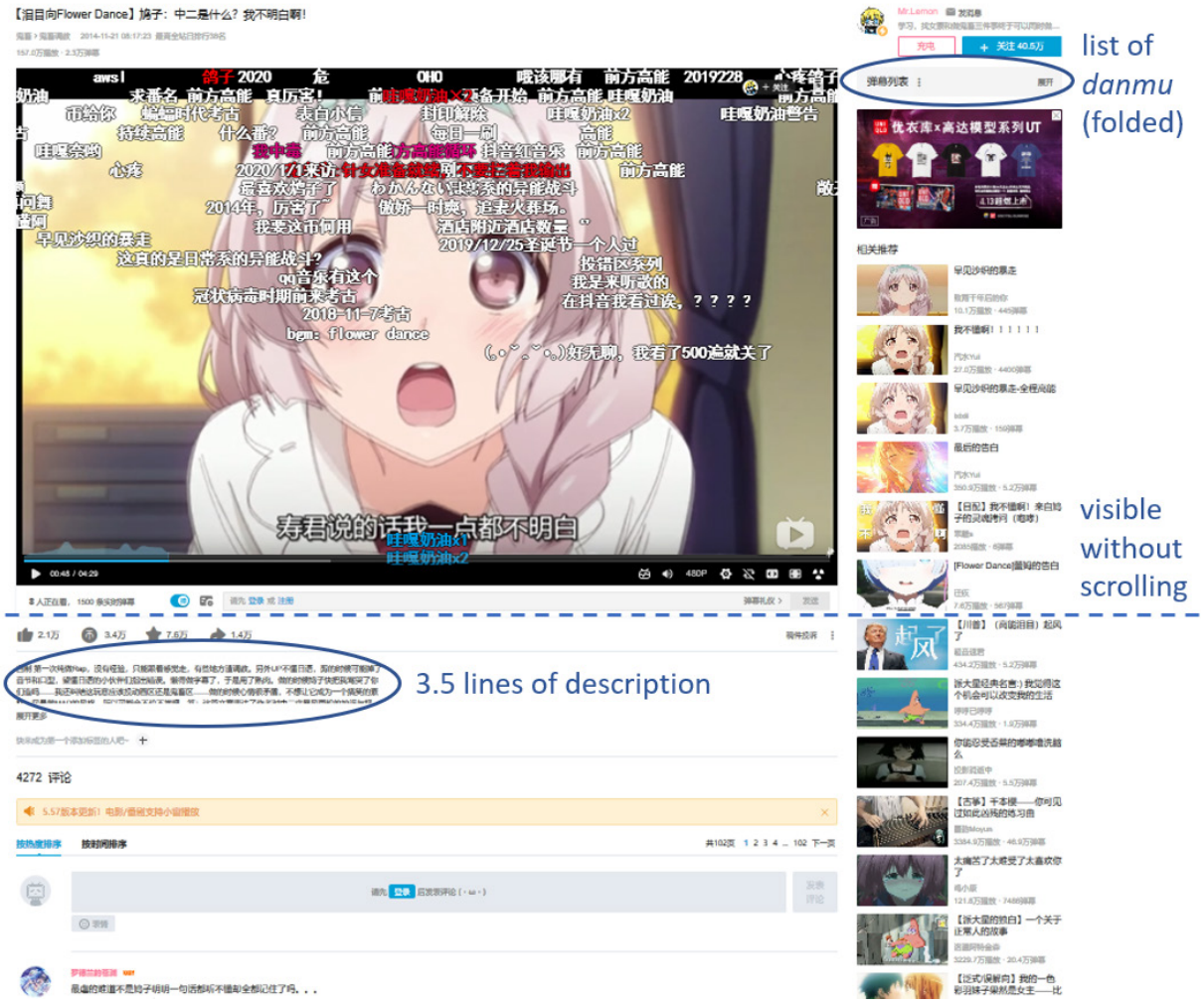


Figure 1: Screenshot of a Bilibili video page (av1731928).

term ‘pseudo-synchronicity’ that portrays “simultaneity despite ‘real’ differences in time between users” (Johnson 301). An experience of ‘virtual liveness’ is generated in such pseudo-synchronicity since the comments across time are transformed into the seemingly simultaneous conversations in relation to the particular moment of viewing the video (Johnson 301; Steinberg 195–96). The prefix ‘pseudo’, on the other hand, indicates the scrolling of danmu comments as a mere display of the previous comments rather than real-time responses (Yang 256), as they are communicated by revisiting, repeating and replaying given their ephemeral nature (Li 251).

With the rooted function of synching comments to specific playback times in videos, danmu has opened up a variety of interactive practices and relationships in Bilibili. A rough idea of community organised around communication and derived from Bilibili’s subcultural otaku origin has emerged as well, leading to questions around the connectivity danmu affords.

Living networks in danmu

By piling up layers of comments to the videos, the danmu function has structured viewers’ connectivity with the video uploaders as the feedback channel despite its disruptive appearance both in terms of its visual experience and the discordant thoughts (Cao).

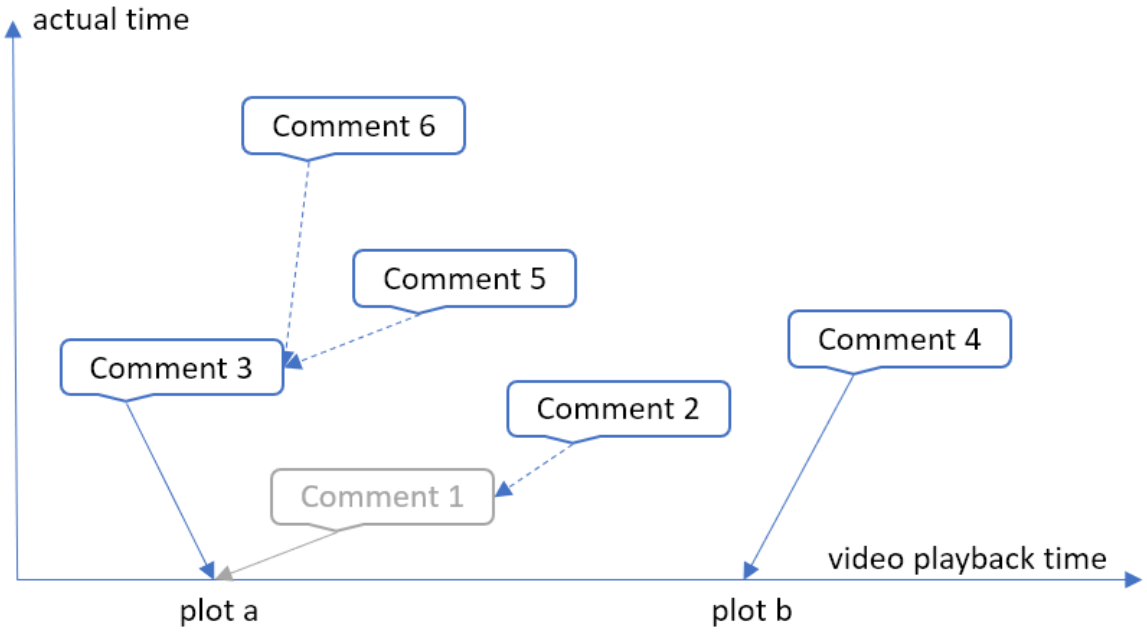


Figure 2: Connectivity of danmu.

It has also formed the connectivity among viewers that affords replies, resonances and denials to earlier comments. From the network perspective, each danmu comment can be taken as a node and the interactions as the edges, whereas the plots of the video hold the base of the network. The ubiquity of connectedness is emphasised in such an abstracting and spatialising procedure with its technical roots in Eulerian graph theory (Thacker, "Part One"). In a sample of the relationships around danmu comments as sketched in Figure 2, comments 1 and 3 indicate the feedback regarding plot a, whereas comment 5 and 6 based on comment 3 can be loosely linked with each other since the focus of the two has shifted from the video to one previous comment. In short, the connectivity of danmu comments are twofold.

More specifically, the connectivity among viewers is clearly demonstrated in the pseudo-synchronicity where 'monologue discussions' are situated, given the feeling of temporal disjunction on Bilibili (Li 249). Although the pseudo-liveness has intensified and highlighted the contradictory temporality (Li 249), it has captured the eagerness of speaking out within the context of the specific content as a precondition. As a result, danmu comments have shaped the sense of a talkative crowd with echoing sentiments or discordant thoughts (Cao). The composite of previous experiences of others' viewing reactions in the present moment indicates the connectedness among the different layers of danmu comments (Johnson 301).

The loose control from the community has also facilitated the connectivity among the viewers. According to the design in Bilibili, danmu comments cannot be deleted either by the commenter or by the video uploader, but can merely be switched to 'invisible' on screen. Such a design choice can therefore be interpreted as a gesture of accepting different opinions. However, when it comes to the comments that go against the community regulations, the only legitimate means is to mark them with the 'report' function and leave them to the back-end administrators. In this light, denouncing transgressive danmu comments has de facto enhanced the connections among comments.

However, as Thacker ("Part One") noted, since time has been flattened into

space in a topology or map of a network, the inherent dynamics and changes within the composition of individual nodes and in the relations between nodes are not represented. The danmu capacity that keeps comments updated but also ephemeral, for example, has structured the temporal dynamic that 'washes away' older comments. When comment 1 in grey is ejected as the danmu capacity is reached, not only is the node itself removed, but comment 2 that is based on comment 1 gets isolated as well. In other words, neither nodes nor edges are stable when the temporal dimension is included in the network since networks are always living networks (Thacker, "Part One").

While the connectivity in danmu is rather obvious in individual videos, it is in fact shared throughout the platform regardless of the contents of the videos or the comments. Not only do danmu comments afford the diversions and transgressions from the original narratives of the videos, posting them is also less demanding in time and effort and more passion or emotion-driven compared to making and uploading a video. Codes and slang in danmu comments get circulated easily due to their communicative value and the anonymity that stresses the textual contents. In this light, it is the danmu function that dominates Bilibili whereas the video contents are dethroned as the bases for the creativity and playfulness in comments. In fact, the amateurism for video makers Bilibili follows has boosted the danmu comments as a channel for judgements and feedback from others. Moreover, the unique multitasking interface that demands time to habituate has limited the expansion of the user community despite its participatory appearance. The scrolling comments are communicated by playfully revisiting, repeating and replaying given their ephemeral nature (Li 251). Viewing from a platform-wise perspective, a network of danmu comments that channels and articulates the participatory attitudes can be portrayed as a cultural generator despite the different videos these comments are embedded in.

Critically, the interiority in the gatherings of danmu is questioned under the notion of 'swarm' that originates from nineteenth century natural science; classification in zoology, structure in comparative anatomy and context in the study of ecosystems (Thacker, "Part Two"). The ethological study of 'social insects' is highlighted in this theoretical trajectory as it raises the issue of the structuring process from 'dumb' individuals to 'intelligent' collectives, particularly with their distributed interactions and decisions rather than the central controller (Thacker, "Part Two"). Such a dumb/intelligent duality can be referenced in the Bilibili case as the fundamental presumptions of the mental and behavioural differences between individuals and collectives, and can also be observed in danmu comments. While the message each danmu comment conveys varies, the general impression of danmu is a communicative means with friendliness and openness fostered by Bilibili's community building. In other words, there remains a middle region between the individual and the collective.

One key approach to these questions is re-examining the idea of participation in Bilibili. Two layers of participation are afforded when danmu comments are posted to videos. On the one hand, it is the interactive design that encourages the users to express themselves as "a rhetoric of progress which promised social progress through technological advancement" (Schäfer 11). From a rather cynical perspective, danmu comments that seem to facilitate a process of emancipation are in fact "integrated into new business models and are subsequently subject to corporate control" (Schäfer 14). On the other hand, the cultural impacts on individual and collective decisions cannot

be neglected (Jenkins et al. 12) since they are able to affect or transform the structural obstacles among different levels (Kelty 24). This is where the emphasis on the participatory condition that refers to both the structure of interpellation and the materiality it relies upon is situated. Following Louis Althusser's reading of ideological interpellation, the participatory condition grounds how subjects respond and what they become (Barney et al., ix–x). In this light, danmu comments in general have on the one hand established the living networks with one link back to the cultural products, and have channelled Bilibili's cultural orientation and social value with other regulatory settings on the other. This is also where collective creative energy within networks emerges.

Representing the affects

Despite the membership test that filters out bots, the correspondence between one danmu comment and a user cannot be established since one person can hold multiple accounts and each of them can be used to send multiple comments. Yet the gathering of danmu has shaped a sense of belongingness and togetherness as if the comments represent digital personas if not people. A theoretical consideration of crowds and affect can be examined in this context.

While the idea of 'crowd' is often traced back to Gustave Le Bon who saw a hazardous status of irrationality with the dense assembling of bodies regardless of the social classes the individual crowd member belonged to (Borch 41), Gabriel Tarde's approach is also noteworthy. From his perspective, crowds are subjected to the dynamics of imitation and suggestion which the society is also situated in (Borch 48). Hence, people act according to a semiconscious imitation which lies between rational choice and irrational desire, and their minds work as part of an endless social network (Borch 58). It is therefore difficult to take a clear cut between the individual and society as well as between internal feelings and external restraints (Borch 58). Despite the different perspectives and hypotheses, both Le Bon and Tarde have taken rationality as an ultimate virtue people failed to achieve due to the physical co-existence.

Elias Canetti's study that focuses on the discharge as the key element in crowd formation shed lights upon a shift from physically congregating to participating in the agendas of mass media (Hagen 128). Crowd members are freed from hierarchies and the fear of being touched in the goal of gathering (Canetti 15–18), and the destructiveness in attacking boundaries such as windows, gestures a sense of togetherness and belongingness within the crowd transcending the limits of its individual members (Canetti 19–20). Features of a crowd such as density, equality, togetherness and belongingness, or at least a sense of them, have continued in the contemporary digital conditions (Chen et al., "Understanding Gratifications").

Like crowds, affect is also seen as an unstable and hazardous factor in an ordered and rational society, especially given the bodily interactions in the assemblages of affective drives (Papacharissi 14). The psychological equivalent to feeling or emotion is connected to the cognitive and the conative that respond to the detection of personal significance (Neuman et al. 9; Papacharissi 12), and is therefore regarded as a synonym for irrationality that endangers both the judgements in making rational decisions and democracy as a form of governance (Marcus et al.; Papacharissi 10). Recent research, on the other hand, has marked an affective turn in the analysis of politics and everyday life which contest the perspective of rationality

(Papacharissi 12). Despite various understandings and interpretations, affect can hold both the corporeal intensity and the abstract fluidity in its focus at the same time, and is inseparable from the flows of technologies (Papacharissi 15–16). In networked patterns, more specifically, affect offers a perspective with an emphasis on power distributions and political formations based on non-linear substantial relationships (Papacharissi 17). It is therefore argued that the significance on the impact or rationality in digital political activities are frequently misunderstood or overlooked as the contemporary political environments cannot be separated from "affective statements that mix fact with opinion, and with emotion" (Papacharissi 26–27). To follow the affective intelligence theory that attentively examines various stimuli to the affective state, the affective reactions and behaviours can be brought back to enthusiasm and aversion on the one hand and anxiety on the other (Marcus et al.; Neuman et al. 3, 16).

Although the assemblage of danmu comments is not equivalent to the physical gathering of a crowd, the momentum of collective reactions emerges. Apart from marking the presence of users, danmu comments mock the contents with slang or gags, or debate viewpoints in the video and previous comments. Despite the various opinions and attitudes, they reveal political moments where antagonist engagements take place and where a sense of belonging and togetherness is shaped. Moreover, the temporal dimension in danmu that keeps comments ephemeral has persevered the temporal quality of participation. Like graffiti to urban governance, danmu has challenged the fundamental ideas of power relationships in Bilibili. Yet the empowerment in danmu comments can also lead to a narcissistic tendency that focuses on expressing instantaneous emotions instead of taking in and reflecting on other comments. In this regard, danmu function has accumulated the affective factors in watching videos with the willingness to speak out, and has further cultivated a collective and playful persona that expresses itself more than listens.

Playing with danmu

The danmu interface can be linked to a broader discussion of playfulness that regards both the rigidness of media structures and the singularity of interpreting media texts as having since room for modification to meet personal needs and as such unleashes creativity in cultural participation (Raessens 106, 108). This is situated in a process that transforms media studies into a playground with ludic activities and experiences due to the socio-cultural, media and institutional changes at the end of the last century (Fuchs 129, 135; Raessens 97). One of the key concerns in this transformation is the materiality of digital media based on hypermediacy in the interactions with multimedia interfaces despite the transparent immediacy it is supposed to follow (Bolter and Grusin 5; Frissen et al. 24–25). To put it differently, the omnipresence of the interfaces through which users experience and interact with computing has become less transparent despite the early aesthetical pursuit for seamless interactions (Andersen and Pold 22), raising a question of playfulness in these interfaces or buttons closely connected to the social and communicative affordances. All these changes have followed the broader ludic turn "in which games and playful experiences are understood as essential components of society and culture" (Fuchs et al. 7–8, 12). Playful elements are integrated in products and services with a cultural-economic concern and as a lifelong attitude so that user involvement can be advanced (Raessens

95–96). The turn takes place not only in the realm of leisure, but educational, political and even military domains which were once considered the opposite of play as well (Raessens 94).

Deep down in this ludic turn is the fundamental understanding of play as part of human nature. At the centre of play is the seriousness in recognising and respecting the rules that constitute game worlds (Bateson 30; Huizinga 11; Raessens 98). Such a temporal and spatial boundary, also known as 'the magic circle', has grounded a free activity of pretence that attracts the player from ordinary life without material interest or profit (Huizinga 13). The messages or signals in play are not necessarily true or real, and these signals can stand for something does not actually exist (Bateson 141).

In this light, the playfulness of the danmu interface has taken the lead in Bilibili. The connectivity in danmu is facilitated by the playful design that devalues videos and enhances the communicative interactions of rewinding, pausing and posting. Challenges over the original narratives such as disagreements and satire can also be placed in this playful trajectory. Having said that, seriousness still exists in Bilibili in the case of feedback and discussions in danmu. When it comes to the boundaries of the magic circle that distinguish playful activities from ordinary life, Bilibili's regulatory settings have functioned as the divisions. In other words, the understandings of 'transgressions' and 'norms' within the Bilibili community differ from 'the outside'.

The pretence in play is also noteworthy with its ambiguous threshold between reality and unreality as a paradoxical sum of two negative meanings at a metacommunication level. To put it more simply, action inside the magic circle "both is and is not what it appears to be" (Bateson 139; Sutton-Smith 1). Therefore, playful behaviours can be seen as an illusion mirrored from the real world that represents reality but in another form (Fink 27–28). In this light, the world of play is built intra-world both with its own kind of reality and as part of everyday reality (Axelos 9), and its boundaries are perceivable as "we know when we are playing and when we are not" (Frissen et al. 18, 24–25). Such an ambiguity has further challenged the hypothesised dichotomy between seriousness and playfulness (Frissen et al. 9; Raessens 94). This is also why both ill-mannered danmu comments and serious advice can be translated into and accepted as casual jokes. In a broader sense, the playfulness in danmu has enhanced the connectivity and redirected the emotional attitudes comments contribute to the gratification of speaking out but not necessarily being heard.

Concluding remarks

The technical design of danmu has encouraged users' involvement when they watch separately, and has formed a sense of togetherness with the overlapping comments. Both Bilibili's marketing strategies and the affordance of danmu have made the platform more than a mere ACGN fandom community, and have highlighted the playfulness in danmu bounded by the community's regulations. The connectivity of danmu has grounded the cultural and political concerns and potentials with the collective creative and affective energies.

Although the discussion is based on a Chinese video-sharing service, most of the observations can be applied to other social media platforms as commenting and reposting as a participatory means of engagement has been widely introduced. Playfulness both in the interface design and in users' reactions has also gone beyond Bilibili with other

examples such as the ephemeral Instagram Stories. In other words, playful networks can be found in different forms and in multiple platforms, and serve to question the understanding of and expectations of participation built into these platforms.

Works cited

Althusser, Louis. *On the Reproduction of Capitalism: Ideology and Ideological State Apparatuses*. Verso, 2014.

Andersen, Christian Ulrik, and Søren Pold. "Interface Criticism: Why a Theory of the Interface?" *The Metainterface: The Art of Platforms, Cities, and Clouds*, 2018, pp. 15–38. Open WorldCat, http://mitpress.mit.edu/9780262037945.

Axelos, Kostas. "Planetary Interlude." *Game, Play, Literature*, edited by Jacques Ehrmann, Beacon Press, 1971, pp. 6–18.

Azuma, Hiroki. *Otaku: Japan's Database Animals*. English ed., University of Minnesota Press, 2009.

Barney, Darin, et al. "The Participatory Condition: An Introduction." *The Participatory Condition in the Digital Age*, edited by Darin Barney et al., University of Minnesota Press, 2016, pp. vii–xxxix.

Bateson, Gregory. *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*. Aronson, 1987.

Bolter, Jay David, and Richard Grusin. *Remediation: Understanding New Media*. MIT Press, 2000.

Borch, Christian. *The Politics of Crowds: An Alternative History of Sociology*. Cambridge University Press, 2012. DOI.org (Crossref), doi:10.1017/CBO9780511842160.

Canetti, Elias. *Crowds and Power*. Continuum, 1981.

Cao, Xuenan. "Bullet Screens (Danmu): Texting, Online Streaming, and the Spectacle of Social Inequality on Chinese Social Networks." *Theory, Culture & Society*, Oct. 2019, p. 026327641987767. DOI.org (Crossref), doi:10.1177/0263276419877675.

Chen, Yue, et al. "Understanding Gratifications of Watching Danmaku Videos – Videos with Overlaid Comments." *Cross-Cultural Design Methods, Practice and Impact*, edited by P.L.Patrick Rau, vol. 9180, Springer International Publishing, 2015, pp. 153–63. DOI.org (Crossref), doi:10.1007/978-3-319-20907-4_14.

____. "Watching a Movie Alone yet Together: Understanding Reasons for Watching Danmaku Videos." *International Journal of Human–Computer Interaction*, vol. 33, no. 9, Sept. 2017, pp. 731–43. DOI.org (Crossref), doi:10.1080/10447318.2017.1282187.

Chen, Zhen Troy. "Poetic Prosumption of Animation, Comic, Game and Novel in a Post-Socialist China: A Case of a Popular Video-Sharing Social Media Bilibili as Heterotopia." *Journal of Consumer Culture*, July 2018, p. 146954051878757. DOI.org (Crossref), doi:10.1177/1469540518787574.

Fink, Eugene. "The Oasis of Happiness: Toward an Ontology of Play." *Game, Play, Literature*, edited by Jacques Ehrmann, translated by Ute Saine and Thomas Saine, Beacon Press, 1971, pp. 19–30.

Frissen, Valerie, et al. “Homo Ludens 2.0: Play, Media, and Identity.” *Playful Identities: The Ludification of Digital Media Cultures*, edited by Valerie Frissen et al., Amsterdam University Press, 2015, pp. 9–50.

Fuchs, Mathias, et al., editors. “Introduction.” *Rethinking Gamification*, Meson Press, 2014, pp. 7–17.

____. “Predigital Precursors of Gamification.” *Rethinking Gamification*, edited by Mathias Fuchs et al., Meson-Press, 2014, pp. 119–40.

Hagen, Wolfgang. “Discharged Crowds: On the Crisis of a Concept.” *Social Media - New Masses*, edited by Inge Baxmann et al., 1st edition, Diaphanes, 2016, pp. 123–33.

Huizinga, Johan H. *Homo Ludens: Study of the Play Element in Culture*. Routledge & Kegan Paul, 1980.

Jenkins, Henry, et al. *Participatory Culture in a Networked Era: A Conversation on Youth, Learning, Commerce, and Politics*. Polity Press, 2016.

Johnson, Daniel. “Polyphonic/Pseudo-Synchronic: Animated Writing in the Comment Feed of Nicovideo.” *Japanese Studies*, vol. 33, no. 3, Dec. 2013, pp. 297–313. DOI.org (Crossref), doi:10.1080/10371397.2013.859982.

Kelty, Christopher M. “From Participation to Power.” *The Participatory Cultures Handbook*, edited by Aaron Alan Delwiche and Jennifer Jacobs Henderson, Routledge, 2013, pp. 22–31.

Le Bon, Gustave. *The Crowd: A Study of the Popular Mind*. Dover Publications, 2001.

Li, Jinying. “The Interface Affect of a Contact Zone: Danmaku on Video-Streaming Platforms.” *Asiascape: Digital Asia*, vol. 4, no. 3, Sept. 2017, pp. 233–56. DOI.org (Crossref), doi:10.1163/22142312-12340079.

Liu, Lili, et al. “Watching Online Videos Interactively: The Impact of Media Capabilities in Chinese Danmaku Video Sites.” *Chinese Journal of Communication*, vol. 9, no. 3, July 2016, pp. 283–303. DOI.org (Crossref), doi:10.1080/17544750.2016.1202853.

Marcus, George E., et al. *Affective Intelligence and Political Judgment*. University of Chicago Press, 2000.

Neuman, W. Russell, et al. “Theorizing Affect’s Effects.” *The Affect Effect: Dynamics of Emotion in Political Thinking and Behavior*, edited by George E. Marcus et al., University of Chicago Press, 2007, pp. 1–20. DOI.org (Crossref), doi:10.7208/chicago/9780226574431.001.0001.

Papacharissi, Zizi. *Affective Publics: Sentiment, Technology, and Politics*. Oxford University Press, 2014.

Raessens, Joost. “The Ludification of Culture.” *Rethinking Gamification*, edited by Mathias Fuchs et al., Meson Press, 2014, pp. 91–114.

Schäfer, Mirko Tobias. *Bastard Culture! How User Participation Transforms Cultural Production*. Amsterdam University Press, 2011.

Steinberg, Marc. *The Platform Economy: How Japan Transformed the Consumer Internet*. University of Minnesota Press, 2019.

Sutton-Smith, Brian. *The Ambiguity of Play*. Harvard University Press, 2001.

Tarde, Gabriel. The Laws of Imitation. Translated by Elsie Clews Parsons, Henry Holt And Company, 1903.

Thacker, Eugene. "Networks, Swarms, Multitudes (Part One)." *CTheory*, edited by Arthur Kroker and Marilouise Kroker, May 2004, http://www.ctheory.net/articles.aspx?id=422.

____. "Networks, Swarms, Multitudes (Part Two)." *CTheory*, edited by Arthur Kroker and Marilouise Kroker, May 2004, http://www.ctheory.net/articles.aspx?id=423.

Wan, Anan, et al. "Online Social Viewing: Cross-Cultural Adoption and Uses of Bullet-Screen Videos." *Journal of International and Intercultural Communication*, May 2019, pp. 1–19. DOI.org (Crossref), doi:10.1080/17513057.2019.1610187.

Wu, Qunfang, et al. "Danmaku: A New Paradigm of Social Interaction via Online Videos." *ACM Transactions on Social Computing*, vol. 2, no. 2, Oct. 2019, pp. 1–24. DOI.org (Crossref), doi:10.1145/3329485.

Xu, Yizhou. "The Postmodern Aesthetic of Chinese Online Comment Cultures." *Communication and the Public*, vol. 1, no. 4, Dec. 2016, pp. 436–51. DOI.org (Crossref), doi:10.1177/2057047316677839.

Yang, Yuhong. "The Danmaku Interface on Bilibili and the Recontextualised Translation Practice: A Semiotic Technology Perspective." *Social Semiotics*, vol. 30, no. 2, Mar. 2020, pp. 254–73. DOI.org (Crossref), doi:10.1080/10350330.2019.1630962.

Zhang, Weiyu. *The Internet and New Social Media Formation in China: Fandom Publics in the Making*. Routledge, 2016.

Zheng, Xiqing. "Cheers! Lonely Otakus: Bilibili, the Barrage Subtitles System and Fandom as Performance." *Henry Jenkins*, 22 June 2017. henryjenkins.org, http://henryjenkins.org/blog/2017/6/15/cheers-lonely-otakus-bilibili-the-barrage-subtitles-system-and-fandom-as-performance.

Rebecca Holt

PORNIFYING THE NETWORK

Abstract

Watching pornography online is a deeply personal, if not secretive act, yet the ease with which a near-infinite supply of adult content is shored up by networks of shared experiences. In fact, the persistent assumption that consuming adult content is a 'closed' experience has largely stunted efforts to reconceptualize online pornography as a "network experience." As Wendy Chun asks, "Why are networked devices described as 'personal,' when they are so chatty and promiscuous?" This article, therefore, attempts to 'pornify the network' by tracing the movement, flows, and processual emergence of networks that have been crucial to the formation and continued proliferation of online pornography. Two case studies are used to illustrate the persistence of this framework: the first theorizes 'edging' in early online pornography, while the second puts into question the politics of the world's largest porn website deploying user data for titillating effect. Theorizing a pornified network ultimately reroutes persistent technological imaginaries of the network through affect, sensation, and the entanglements of desire.

APRJA Volume 9, Issue 1, 2020
ISSN 2245-7755

Watching pornography online is a deeply personal, if not secretive act. Going 'incognito' on our personal devices for privacy, compartmentalizing our porn viewing away from our 'normal' browsing while tapping into a seemingly infinite supply of porn. However, the ease our devices provide today—saving us what would have previously required a trip to an adult movie theater or the back room of the video store—is the result of giving up privacy. In *Updating to Remain the Same: Habitual New Media*, Wendy Chun asks, if the basic operations of the Internet require "users constantly [downloading] their neighbor's traffic...why did we ever imagine the Internet—which is, at its base, a control protocol—to be an anonymous space of freedom? Why are networked devices described as 'personal,' when they are so chatty and promiscuous?" (x). The steadfastly taboo status of pornography makes us even more inclined to think of our watching pornography online as a secret. However, just as with other online activities, the moment you hit the homepage of your favorite porn site, you agree to share information, clicks, and traffic. With this in mind, the following piece experiments with what I am calling, 'pornifying the network', or, privileging pornography as a unique site of research for understanding the network as "chatty and promiscuous."

Pornifying the network is not about creating a diagram or mapping the use of online pornography. Rather, my goal is to track what Anna Munster terms the "network experience," or the movement, flows, and processual emergence of networks in relation to porn. As Munster argues, instead of visualizing networks and identifying them everywhere, "We need to immerse ourselves in the particularities of network forces" and that, "It is this level of imperceptible flux—of things unforming and forming relationally—that we discover the real experience of networks" (3). Thinking through this "real experience of networks" is what allows us to view the Internet from a different perspective, and for my purposes, analyze the role of online pornography in the experience of the Internet more broadly. In the following article, I utilize the framework of network experience to analyze two case studies set in different periods. The first examines the presence of pornography on Computer Bulletin Board Systems in the late 1970s and early 1980s. The second is the Pornhub Insights Blog, a statistical press vehicle that visualizes data from Pornhub users. With both case studies, I place the research of digital media scholars in conversation with historians and scholars of pornography. Several researchers have made significant contributions to the topic of digital pornography including Susanna Paasonen, Katrien Jacobs, Feona Attwood, and Patrick Keilty, to name a few. However, despite the growing number of scholars studying online pornography, the assumption that consuming adult content is a 'closed' experience has persisted and largely stunted efforts to reconceptualize online pornography as a "network experience" shored up by internet technologies. The central goal of this article is to experiment with pornifying the network. In doing so, I also hope to draw attention to the crucial role of online pornography in defining the material and discursive conditions in which we create, circulate, and consume online content more broadly.

I. BBS and Edging

One reason it is useful to place the concept of network experience alongside online pornography is because of the compelling historical relationship between the early Internet and adult content. Not only did the "threat" of online porn guide mainstream and institutional discourse about the regulation

of the Internet, but adult content producers are the originators of numerous technologies that continue to define online experience today (Chun 108-110). From credit card payment systems to advertising, and even video-streaming, online pornographers were some of the first to understand the potential of the Internet as a medium for content creation, delivery, and distribution (Barss 114-116). However, in addition to these historical connections, I also see a more basic link between network experience and porn. The connection draws even closer when Wendy Chun argues for a reframing of networks as "the pulsing of energy and affect" (49). A guiding query among pornography scholars, in particular, has been to negotiate the representational versus the affective elements of porn: is it something you look at or something you feel? The answer is both, but accurately describing sight versus touch in the analysis of pornography has remained difficult for the field of pornography studies. To expand upon this basic connection, I draw upon the history of Computerized Bulletin Board Systems (BBS) and early computerized pornography. The BBS was difficult to use, and in many ways, a technological failure. The BBS is therefore a good place to begin pornifying the network as it provides a unique glimpse into experiences and feelings that structured the network experience of early online pornography.

In 1978, Chicago was shut down by a blizzard dubbed the "White Hurricane." Trapped inside his house, a young programmer named Ward Christensen decided to create a computerized version of the corkboard his computer hobbyist club used to leave messages for one another (Kushner 33). After two weeks of work, Christensen launched the Computerized Bulletin Board System, or the BBS for short (33). According to journalist Patchen Barss, the BBS was "dead-end technology, ultimately subsumed by the Internet"— due in large part because it was complicated and slow (Barss 79). However, despite this, Barss continues, "[Bulletin Board Systems] were many people's introduction to the online world. And thanks to a robust trade in pornographic images, they drove the market for home computers and modems" (79). It is difficult to confirm the extent to which pornography drove the market for home computers, but we do know that it took less than a year after the invention of the BBS for adult content to begin sweeping across the systems (Kushner 33-35). In the beginning, it was just boards dedicated to "dating." On one board called the French Connection, users would log on and were given the choice of pressing 6 for "Sexual Discussion," 9 for "Guys Locker Room," S for "Swing Scene, and so on" (70). You can picture these boards as early message forums used to discuss sex or arrange hookups in real life. As the 1970s drew to a close, however, it started to become possible to upload, consume, and download pornographic images across a variety of boards, not just the dating kind. Users would upload images in one of two formats: computer images drawn from lines of ASCII text (the American Standard Code of Information Exchange), or scanned pornographic photos uploaded as binary files (44-45). Examining the popularity and nature of pornographic content available on BBSs is an entire project unto itself. However, for this article, I am more interested in thinking about the flourishing of porn despite the technological constraints of the BBS.

Accessing or managing a bulletin board system required a great deal of money, time, patience, and technical expertise. You would need to purchase a personal computer, a modem, a CD-ROM drive, software to run a BBS, and pay for an extra phone line—none of which were particularly affordable (Dewey 23). If you were unfamiliar with computers, you would have to take the extra step of

signing up for a distance learning program or a night class at the local college. If you were searching for the proper software or interesting BBSs, it was necessary to send away for guides and directories (23). Moreover, the BBS membership itself could be expensive. The dating board mentioned above, The French Connection, cost $18 per month in 1979 (Kushner 70). To top it off, when you did finally figure everything out and place a call to the system of your choice, you would often have to wait your turn to dial into the board. Especially in the early days of the technology, boards could only deal with a handful of users at once, which also meant asynchronous communication between users. Writing about the early Internet, Patchen Barss states, "It is virtually inconceivable to us today how slow, unreliable and expensive it was to go online, how much patience it took to make a cantankerous modem do what it was supposed to, how much tweaking and troubleshooting it took for a process that never seemed to go smoothly" (80). Yet, despite this Barss also admits that Bulletin Board systems and these "computer-to-computer connections'' were the early flickers of the Internet we have today (79). Comparing the speed with which pornography emerged and multiplied on the BBS with the patience it took to access the system, I am led to thinking more closely about how the affect of waiting in combination with that of porn was inscribed upon early network operations. In particular, the practice and concept of edges and edging.

To explore further what I mean, I refer to Anna Munster's book, *The Aesthesia of Networks: Conjunctive Experience in Art and Technology*. In the first chapter, Munster analyzes Paul Baran's often-cited diagram of a distributed communication network, exploring its origins. Munster argues, following World War II and the ongoing Cold War, "The map of distributed communications materializes cybernetic military design—a network of proximate modules for withstanding attack" or in other words, the diagram was a representation of the American attitude, "don't get too close to your close or distant neighbors" (22). This origin point, Munster argues, has continued to influence our representation of networks from maps of server connectivity to "associations between users in social media networks," we imagine networks as "smoothly operable interconnectivity" (21). As an alternative, Munster argues that packet switching or the grouping and transmission of data through whatever route the network deems optimum is perhaps a better lens through which to imagine networks (22). If you take the example of packet switching then instead of smooth interconnectivity, the network is more accurately described through the image of a queue, the act of swarming, and the experience of waiting (20). To demonstrate this Munster cites the example of peer-to-peer (P2P) file-sharing: a single user makes a request for a file and waits in line to access it from its central location. Once the user is done waiting and has downloaded the file, they then become a source for the file themselves (31). Munster concludes when you privilege packet switching as the defining characteristic of networks you understand "the experience of networking is somewhere else" (31). Networks are instead defined by the processual emergence of links that are constantly forming relations and creating edges. Or, in the words of Wendy Chun, "'liveness' defines networks. Networks drawn from communication systems, presume flow between nodes so that networks are 'alive'"(48).

With Munster and Chun's arguments in mind, I want to reimagine the experience of the Bulletin Board System through the concept of edging. Picture the BBS user who has just spent a large sum of money on an IBM PC, a modem, a second telephone line,

and specialized software—perhaps they are constantly running up the phone bill. They have purchased and consulted numerous BBS guides, reading between lines, or asking friends for recommendations of what boards to dial in to. They try numerous boards, sift through content, and eventually find a file they desire. Imagine them sitting in front of a computer screen and watching as a binary file slowly loads—reassembling bit-by-bit to reveal the image they sought out. As the software assembles the file, the hobbyist doesn't know what to expect or when the image will be complete. Undoubtedly, they would sit there, waiting, yearning, and edging. The literal definition of edging refers to the practice of bringing oneself to the brink of sexual climax and stopping—this is typically done repeatedly to increase the intensity of the sexual experience. Munster uses the concept of the 'edge' to imagine how links and nodes are always in motion and constantly emerging. I suggest that in addition to the act of waiting, desiring is also a driving force for the constant emergence of edges. The BBS is a foundational moment in the trajectory of porn. By reframing it through the experience of edging we come to a better understanding of how eroticism is inscribed within the network— this is pornifying the network.

II. The Insights Blog

If we began to pornify the network by reframing the Bulletin Board System through the delicious experience of waiting for an image to load, then the Pornhub Insights blog represents the fracturing of that process. The Insights blog is symptomatic of a network experience that rejects waiting and edging. Instead, the blog argues that the experience of online pornography should, instead, revolve around the production of big data. Briefly, The Insights blog is the data-reporting PR arm of Pornhub: the most well-known site in online pornography, which is run by MindGeek, its little-known parent company and the corporation largely responsible for the proliferation of free pornography websites over the last decade. Since the launch of its first tube porn site in 2008, MindGeek has rapidly acquired most of its competitors and honed the model of video-sharing pornography platforms. The Insights blog is one of MindGeek's numerous public relations strategies for shaping the perception of their business. It is intended to be a fun and humorous engine of viral content for mainstream media outlets and social media. Each month, MindGeek utilizes the data collected from millions of Pornhub users to visualize correlations between trends in popular pornographic search terms with current events, holidays, or topics such as sex, gender, nationality, and entertainment culture. In the following section, I focus on one blog post published in 2019 entitled, "The 2019 Year in Review." More precisely, I move past the facile aspects of Insights and explore the implications of visualizing pornography.

Each year, the blog publishes a post summarizing trends on Pornhub for the entire year. The introduction to the 2019 version reads, "you already know 2019 was a juicy year—jam-packed with celebrities, happenings, and events that influenced how people utilized and enjoyed Pornhub. Below, you will find data that Pornhub's trusty statisticians have compiled for you, colorful charts to help you visualize this Year in Review, and commentary to help make sense of the wild world of tech, adult entertainment, and everything." First, the blog spins porn as a readable topic of general interest—it employs jokes, innuendo ("juicy" and "jam-packed"), and "colorful charts," to frame itself as a fun, slightly naughty, and humorous experience. We do

not typically connect the word "fun" with data visualizations as they are often considered rigorous tools of knowledge production. Funny and bright data visualizations are more likely to become viral, but the upbeat language and fun visualizations become important when placed in comparison with pornhub.com. The Pornhub interface is purposely designed to be chaotic, it is over-stimulating and difficult to navigate in order to retain users on the website (Keilty). The longer a user stays engaged, the more likely they are to create advertising revenue and the more data can be collected about their habits. Insights frames itself as the opposite experience to distract from critical questions about where the data comes from and how it's being assessed.[1] And, it is successful in these efforts, month-after-month various online publications repost the visualizations, encouraging their audiences to laugh at how the top search term in most republican states is, according to Pornhub "stepsister," for example. Second, the Year in Review's introduction also draws connections between world events and how people watch pornography. The terms Pornhub uses to categorize pornographic content, and the types of search terms that are often trending, are related to sexual acts, desires, and identity formation; terms such as 'lesbian,' 'threesome,' 'Amateur,' and so on. However, the introduction to the 2019 Year in Review assumes a broader relationship between the outside world and pornography. Asserting that instead of searching for 'lesbian' pornography because you desire to watch two women have sex, your proclivity for lesbian content might be linked to a news event, a celebrity, or even your nationality. I don't disagree that the consumption of pornography and desire are woven into the broad fabric of the mainstream, but it is important to pay attention to how and why MindGeek is creating these connections.

To analyze the above point in more depth, it is useful to analyze the image of one of the data visualizations. The 2019 Year in Review covers many topics, including 'Top Searches & Pornstars,' 'Gender Demographics,' 'Age Demographics,' 'Devices & Technology,' 'Top 20 Countries in Depth,' and more. Yet, I always take the most time looking over their use of thematic maps. A data visualization titled "The World's Most Viewed Categories," a world map of the most popular pornography categories across the globe (figure 1).

On the map, muted pink blankets the American Continent as the word 'Lesbian' categorizes users from these regions. All of Russia is bathed in a cornflower blue correlated to the subgenre 'Hentai.' Conversely, the vast majority of the African continent is filled in with a lilac hue representing the search term, 'Ebony.'[2] The map is an absurd experience as it invites you to redraw the world in the image of pornography—entire countries glued to their computer screens browsing through Pornhub and its people collectively sharing in the pleasure of consuming the same kind of adult content. The visualization makes sweeping generalizations and it is a clear example of statistical bias. Yet at the same time, the influential symbol of the map in combination with the promise of data visualization leaves the viewer wondering if the information on the map might be correct. Of course, answering this question is, in large part, impossible, not least because there is very little known about how Pornhub, and its parent company MindGeek, source this data. Moreover, similar to their use of humor and colorful images, the cognitive link the map suggests between nations and pornographic search terms is largely a distraction. For my purposes, questioning the veracity of the visualizations is far less vital than analyzing the discourses this map seeks to support and regularize.

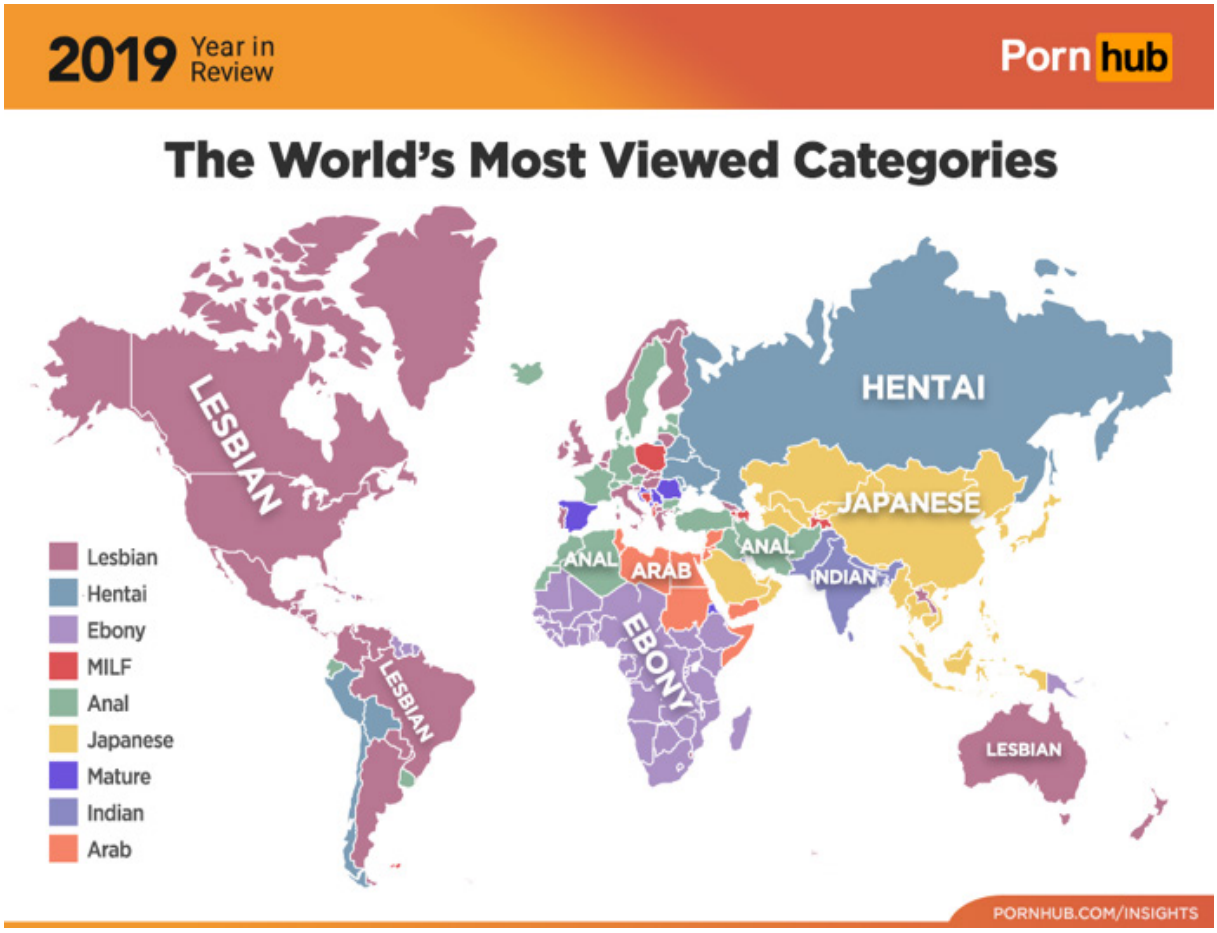


Figure 1. "The World's Most Viewed Categories" included in "2019 Year in Review," *Pornhub Insights* Blog, 11 Dec, 2019; https://www.pornhub.com/insights/2019-year-in-review.

In the introduction to this section, I argued the Insights Blogs disrupts the model of the network and edging. To expand, Insights promises readers and viewers unprecedented access to the global scale of pornography consumption—using charts, graphs, and maps to imagine the users of Pornhub as a worldwide network. The implicit assumption about mapping pornography is that it is possible to collect, archive, and represent the affective encounters between pornography and people on a global scale. However, as the analysis of the Bulletin Board demonstrated, images of online pornography networks are incapable of representing the affective encounters between online pornography and people when the links and nodes of the pornified network are constantly in a state of becoming. Or, as Anna Munster states, "What we have lost in the model of the network delivered to us via the image and theory of the graph is the experience of the edges, the experience of relation" (31). The "experience of relation" is not evident on the Insights blog. Instead, the blog is evidence of the extent to which neoliberalism has penetrated the technological imaginary of the network. The Pornhub user, like the BBS user, still waits; they edge as they browse through personalized recommended content and/or enter search term after search term. The difference is that masturbation is no longer the driving force of edging, instead, edging has become an engine for data production. Wendy Chun echoes this process in her argument that, "By rendering the world into nodes and edges, networks both embody neoliberalism's vision of individuals

as collectively dissolving society and foster analysis that integrate action/tics into shareable trends/habits" (39). Chun continues by stating that although networks promise to map individuals in relation to others, they often obfuscate instead of empowering. The network image has been, instead, "used to preempt disruption and make users more predictable. Network maps inert the dynamic system they trace" (Chun 40). The Insights blog produces maps of the pornified network to assert MindGeek's control over its users' habits, employing the assumed objectivity of data visualization to erase any trace of the network experience. Imagine the Pornhub user reaching the homepage of the Insights Blog and eagerly scanning "The 2019 Year in Review." They have spent the year browsing through Pornhub, perhaps hiding in the bathroom at work or laying in their bed late at night; they more than likely entered hundreds if not thousands of search terms, opening video after video, deferring the possibility of pleasure. Yet, when the user looks at "The World's Most Viewed Categories" these actions are nowhere to be found. The map promises to visualize the globe but in doing so erases the possibility of understanding the affect comprising the pornified network.

Conclusion

In the first section of this article, I reconceptualized the network experience through pornography on Computerized Bulletin Board Systems. The goal of this analysis was to reframe Anna Munster and Wendy Chun's exploration of network edges to include 'edging' within the network imaginary. The second part of the paper analyzed the Pornhub Insights Blog to reveal the intersections between neoliberalism and the network within a pornographic context. Here, the aim was to unearth the presence of edging amidst MindGeek's attempts to map pornography and transmute its users into an abundance of data. The pornified network is not: 'networks: the naughty version.' Instead, the pornified network refers to the potential for the pornographic to reroute persistent technological imaginaries of the network through affect, sensation, and the entanglements of desire. In particular, to question fixed diagrams and maps that imagine the network as an enclosed web. However, my goal was not just to use online pornography as an example of how networks are innately "promiscuous" (Chun x). More than that, I have been striving to suggest that, at the core of the network, there is something innately pornographic. This is demonstrated first through the role of pornography in expanding the Internet and second through a series of affectual processes that the network and pornography share; waiting, searching, and edging. As Wendy Chun argues, "networks are *about* edging: pulsations that frustrate neat separations and create sticky connections between the molecular and molar" (49). There is something to be gleaned about the network through its pornification, so to speak. At the very least, confirmation that the network is not only 'alive' as Wendy Chun states, but also laden with desire.

Notes

[1] The Pornhub Insights blog has always maintained that it does infringe upon the privacy of its registered users. Instead, the blog claims to partner with Google Analytics to source data such as the IP address, age, gender, and preferred device. However, even if this were true, it does not prevent MindGeek from collecting, utilizing, and/or selling the data of its users.

[2] When users reach Pornhub.com they have the choice of looking for content in several ways, namely by using search terms or browsing through numerous preset categories of pornography. Many of the categories are labels that have been used to describe adult film for decades, such as, "BBW" and "Lesbian," while other categories detail specific sexual acts and still others direct viewers toward certain nationalities and languages.

Works Cited

Barss, Patchen. *The Erotic Engine*. Doubleday, 2010.

Chun, Wendy Hui Kyong. *Updating the Remain the Same: Habitual New Media*. The MIT Press, 2017.

Jenkins, Philip. *Beyond Tolerance: Child Pornography on the Internet*. New York University Press, 2001.

Keilty, Patrick. "Desire by Design: Pornography as Technology Industry." *Porn Studies* vol. 5, no. 3, 2018, pp. 338-342. https://doi.org/10.1080/23268743.2018.1483208.

Kushner, David. *The Players Ball: A Genius, A Con Man, and the Secret History of the Internet's Rise*. Simon & Schuster, 2019.

Munster, Anna. *The Aesthesia of Networks: Conjunctive Experience in the Art and Technology*. The MIT Press, 2013.

"The 2019 Year in Review." *Pornhub Insights Blog*, 11 Dec. 2019. https://www.pornhub.com/insights/2019-year-in-review. Accessed 20 Feb. 2020.

Wallace, Benjamin. "The Explosion of Free Online Pornography: The Geek Kings of Smut." *The New Yorker Magazine*, January 28, 2011. https://nymag.com/news/features/70985/. Accessed 10 April. 2020.

Wing Ki Lee

NETWORK UNAVAILABLE: PLATFORM, PERFORMATIVITY, AND EVERYDAY LIFE DECISION-MAKING PROCESSES IN CONTEMPORARY CHINESE NETWORK CULTURE

Abstract

This paper problematizes assumptions of global all-pervading 'available' network culture by examining 'network unavailability' phenomenon in contemporary Chinese network culture through a post-colonial critique. The central argument of 'network unavailable' in China is contextualized by the performativity of the Great Firewall and the Golden Shield Project, Chinese media artist Fei Jun's net art project *Interesting World* (2019) in the Venice Biennale and network happenings during the 2019 Anti-extradition Law Amendment Bill protests in Hong Kong. Through these examples the author argues that network culture in China is political and geopolitical and the discussion of networks should go beyond mere structuralism and emphasize the everyday life, tactical, and microscopic decision-making process.

APRJA Volume 9, Issue 1, 2020
ISSN 2245-7755

> *If modern colonialism has been initiated and shaped by the West, then the postcolonial enterprise is still operating within the limits of colonial history and has not yet gone beyond a parasitic form of critique… Globalization without deimperialization is simply a disguised reproduction of imperialist conquest.* (Chen, Asia as Method: Towards Deimperialization 2)

This paper seeks to unpack and problematize assumptions of omnipresence and totality of a global all-pervading 'available' network culture by examining 'network unavailability' in contemporary Chinese network culture through a post-colonial critique.

The central research question of the paper is straightforward, that is, to understand network culture in contemporary China, that in itself may reconcile, concede, and contradict the experience of global, often 'Eurocentric,' available 'World Wide Web' network culture. To begin with, one might ask why contemporary China in the discussion of networks from a postcolonial perspective? It is generally understood that the USA and Europe are leading countries in the development of information technology and the discourse of network culture, and yet China, interestingly, has the highest number of Internet users in the world, and there are other non-EuroAmerican countries that one may overlook. In 2019, China had approximately 854 million Internet users reported by the Internet World Stats that is three times that of the USA (293 million) and eleven times that of Germany (79 millions). The top ten countries with the highest number of Internet users are China (1st), India (2nd), Indonesia (4th), Brazil (5th), Nigeria (6th), Russia (8th), Bangladesh (9th), and Mexico (10th).[1] The statistics tellingly shift our attention to the discussion of network culture informed by the user-demographic perspective and draws our attention to countries that are often called 'technologically backward' in terms of technological development. The data also allows us to depart from an Eurocentric focus, to engage the major stakeholder of network users, and expand the demographics of network users to the 'rest of the world'. What is the experience of the network for 854 million Internet users in China in comparison to what is commonly known through existing scholarly research in network culture? China is not absent from academic literature recently in network culture and media studies (for example, Schneider 2018; Li 2019; Neves 2020), but a critical perspective on the nature of its network culture will be helpful to contextualize thinking, expectations, opposite forces, and perhaps the future of network culture in China, as well as elsewhere. In this essay, as such, I take the unavailable network as the starting point of my enquiry.

In what follows, the notion of 'network unavailable' is informed by two conceptual layers. The first, the macroscopic layer, refers to the network infrastructure and platform, in this case the Great Firewall (GFW) and the Golden Shield Project (GSP) of China. The Great Firewall of China, being a gateway and a self-contained network system, in itself is conceived as a parallel universe to the Internet (Griffith 2019). This 'wall' is constructed not only to block and isolate itself from global information technology and its circulation, but to remain operational as a network infrastructure within the cyber territory of China; whereas the Golden Shield Project is the agent of the Great Firewall to execute tasks, mainly through censorship, blocking, and filtering of information from and approved by the Chinese state government and the Chinese Communist Party. In a nutshell, both the GFW and GSP demonstrate the unwillingness to partake in the 'EuroAmericentric' thus 'imperialistic' Internet model for political-economical-technological

reasons, and a withdrawal and resistance to global information circulation and global network culture.

Secondly, the microscopic layer, the notion of 'network unavailable' is addressed by artistic practices and a politics of everyday life that questions the taken-for-granted availability and openness of what network culture once promised. I draw case studies and experiences from contemporary artistic practice in China and the everyday experience, primarily the 2019 Anti-extradition Law Amendment Bill protests in Hong Kong, and through these outline key characteristics of a 'network unavailable'. These activities and practices, I argue, could be formulated as a provisional challenge, and/or resistance to network culture in China. All in all, network culture in China is not merely a matter of exclusion and protectionism, a distinction of the real and the counterfeit (or the performed), but a dialectical operation to allow us to rethink the current state of global network culture through its decolonization.

Let me briefly define the scope and terms of postcolonial studies and decolonizing technology before the discussion proceeds. In "Digital Postcolonialism" (2015), Jandrić and Kuzmanić follow Edward Said's (1993) argument and establish the concept 'digital postcolonialism' that "should start from… geographical thinking in the digital worlds… [and] consists of the dialectic between an object and its representation, a territory and its map" (Jandrić and Kuzmanić 38). The geopolitics of the digital has already been demonstrated in the aforementioned Internet World Stats (2019) example. Along this line of thinking, the conceptualization of the decolonizing technology, I argue, is to go beyond the established geographical/binary oppositions of, for instance, the West/rest, the global North/global South, the technological superior/inferior, and use the example of China, which is often not considered as a model of information system and technology, and to debunk some of the dominant discourse in the discussion of network culture in a global context. The discussion that I draw upon below aims to reveal how non-EuroAmerican network culture produces effects locally and on the global scale.

A few more contextualizations on the notion of 'network' in contemporary China network culture are needed. Firstly, I would like to stress that the discussion is not merely framed by geographical or territorial definitions but is more a 'stack' of interacting layers. Secondly, the discussion and definition of network here are not only descriptions of the age-old belief of 'guanxi', which in sociological terms is a personal social network and its associate power in the Chinese context. Rather, I see network culture in China as multifaceted in how the political-economical-technological aspects contribute to shape it. Network culture in China is informed by ideas such as nationhood, cyber nationalism, economic protectionism, and political hegemony, and practiced through information and algorithmic-ideological control. It is further complicated by the sociopolitical relationship between China, Hong Kong, Taiwan, (the Sinophone), and their relationships with the rest of the world. I would argue the notion of 'network' in China network culture is a complicity that is established by disconnection, unavailability, and withdrawal. It is imperative to discuss the configuration and influence of China's network culture and practice and, through that, demonstrate how network unavailable, instead of the commonsensical 'network available,' provides a context for discussion. This discussion gradually extends to concepts and questions related to such things as protectionism, censorship, transgression and resistance and through online/offline networks.

In what ways should we understand China and the network unavailable culture as

such? First of all, the GFW offers a geopolitical, infrastructural, and informational platform to identify cyber protectionism in China and in the global context. A network 'gateway' that started operations in 1998, it is considered as an 'alternative model' or a 'parallel universe' to that of the Internet. Thus metaphors used to describe the GFW of China is a 'wall,' a 'shield,' a 'sword' and a 'war' in itself (Griffith, 2019). The aforementioned analogy by James Griffith (2019) outlines the competitiveness, if not counterfeit nature, of the GFW of China. As an 'alternative' web model, China has its own search engine (*Baidu* instead of Google), social media and messaging apps (*Weibo* and *Wechat* instead of Facebook and WhatsApp), its own e-commerce mobile platform (*Alipay*), its own Uber (*Didi*) and many more. These 'common' websites and apps, such as Google, Facebook, Uber, and WhatsApp and more recently Wikipedia (since April 2020) are also blocked in China.

The parallel/alternative universe analogy is evident by how a Chinese version of global networks is created, operated, and functioned similar to an earlier Eurocentric model of information and ideology. It shows that no matter how much a Chinese version wants to depart from the World Wide Web, it inevitably sprung from there. At the beginning of this essay, I cited a passage from Taiwanese cultural studies scholar Chen Kuan-Hsing in *Asia as Method: Towards Deimperialization*. In this passage, Chen argues that the 'post-colonial enterprise' is always undermined by colonial history without critical examination, which could can also relate be situated in the discussion of network culture studies (Chen 2). The 'alternative' Internet in China requires close and critical examination of why and how such network operativity is drawn on the very idea of disconnection from the global network, despite being heavily influenced by it.

To continue this line of thought, the Great Firewall of China is hence constructed through how the Chinese government invents an information technology network that is built against the notion of openness and liberation of information. The GFW withdraws and blocks globally recognized information and services and in itself is a defense mechanism, and through that, to construct a state machine and algorithmic-ideological apparatus that allows censorship of information. For example, search engines in China filter anti-government and anti-CCP information in the name of proper governance, civil or cyber protectionism, and cyber nationalism. Such a defense mechanism through censorship extends to social control. According to research by Repnikova and Fang (2018), netizens in China 'co-produce' political persuasion that favours the communist regime in the online sphere through official state online media, expansion of government *Weibo* and *WeChat* accounts, and through grassroots patriotic bloggers in the name of civilizing information management and as 'authoritarian participatory digital persuasion 2.0' (Repnikova and Fang, 2018). The incorporation, or precisely the *détournement*, of the state and authoritarian propaganda model and through grassroots expression and disinformation has its strong presence in the platform politics of China. The practice of disinformation in contemporary China will further illustrate how network, platform, and censorship become an algorithmic-ideological apparatus. Fake news in China is either prohibited or censored by the Golden Shield Project (also known as the National Public Security Work Informational Project) or even created by the Project itself. The Internet meme of Chinese leader Xi Jinping and Winnie the Pooh which is banned in China without doubt illustrates this idea. The WeChatSCOPE (https://wechatscope.jmsc.hku.hk), an online database and research project developed by

the Journalism and Media Studies Centre at the University of Hong Kong, monitors selected WeChat public accounts and detects 'removed' contents.[2] A scholarly database that allows citizen and researchers to search and visualize censored content in China, the WeChatSCOPE project, however, does experience 'error' and 'failed to start' messages from time to time. Is it a technical faulty or is it being blocked? The concept of 'fake news' in China further elaborates and contests how the West considers 'fake news'. In China refers to 'fake news' points to news and disinformation that is neither approved by nor favorable to the Chinese government. Interestingly, fake news that is favorable to the CCP could be widely circulated, as state propaganda. Recently, how the Chinese government re-routes COVID-19 news is a vivid example. The prohibition of politically sensitive content and economic protectionism addresses the political economy of network culture in China. Network availability is a political-economical decision and expression. I argue that the network culture of withdrawal, exclusion, and blocking in China reinforces layers of 'network unavailability' in everyday life: assuming the network itself is a utopia of the free circulation of information, however network culture in China is operated through withdrawal, blocking, and exclusion of information under the state's control and censorship. However, practice of alternative browsing and access to the Internet beyond the Great Firewall does exist, for example the infamous *Fanqiang* (to literally "go over the wall"), despite being an illegal activity in China. The practice of *Fanqiang* could be seen as a tactic of resistance that further problematizes nationalism and network culture in China.

On a global scale, as a closed national network system itself and operated in parallel to the Internet, the Great Firewall of China demonstrates a decentralized and 'autonomous' network model, that operates and counteracts. I am not praising the GFW, nor am I advocating manipulation of disinformation and state censorship of information on a global scale. Rather, a different, if not an alternative and decolonized, information technology model should be recognized. A previous non-Chinese model and its development before the Internet, for instance the French Minitel terminal project (1980-2012), which has largely been unacknowledged in the discussion of network culture. The Minitel project not only provides a critical example to supplement the history and knowledge of a nationalized and 'pre-history' information technological platform, but also demonstrates how nationalism instructs and influences a network model (Mailland and Driscoll 2017). The Great Firewall of China is not the only national network in the global arena, other totalitarian regimes have their own, for instance, North Korea operates the Kwangmyong network, a national intranet and a browser, Naenara (http://naenara.com.kp) that can be accessed outside North Korea. These are networks of political economy, economic protectionism, and cyber nationalism: networks that are not made to make information available to all, but to serve the cause of national interest. Cyber nationalism operates on a language level; for instance, it is not easily accessible to browse and search information from Japan or Russia if one does not know Japanese or Russian. The universality of computational language (considered to be English) needs to be questioned in the discussion of network culture. Both the Great Firewall of China and the Kwangmyong network are rather extreme illustrations of cyber nationalism, yet they are also rather powerful examples from the decolonization of technology perspective.

However, we should not reduce our understanding of Chinese network culture as being merely a closed network system

according to the notion of nation-state and geographical/informational territories. As Benjamin Bratton points out regarding the Sino-Google conflicts in the essay "The Black Stack" (2014), China is also involved in the global network infrastructure, for example in the platform of the cloud as a stack (Bratton, 2014). Recently Chinese 5G network equipment provider Huawei's proposal to build mobile network infrastructure is being repudiated and replaced in the UK, Canada, and many other countries. This is for political-economic reasons rather than being solely a network-technological decision. The cloud, the layer, the user, and the network infrastructure are no longer defined by geographical sovereignty and the nation-state. The globality of network culture is evident when we look at the operational aspect and the black box politics of such. And yet, the Great Firewall, Kwangmyong, the deep web, the dark web, all these microcosms outlines and questions the assumption, integration, and interconnectedness of one widely available network. The utopic vision of interconnectedness of a network should be called into question, as the commonly known available network is only the tip of an (network) iceberg.

After this discussion of macrocosm and the infrastructure, we now return to the argument of 'network unavailable' to layers of the experience at the microscopic level. Firstly, I am going to focus on an artistic practice from China to start the discussion. At the China Pavilion, Venice Biennale 2019, media artist Fei Jun's interactive installation *Interesting World* (2019) exhibits the performativity of the network culture of China that could only be achieved by an offline system. Interesting World is a set of media projections operated by a presumably offline and 'faux' face-recognition technology. The installation brings visitors to a simulated image surveillance environment mimicking that is pervasive in contemporary China. There is an estimated that over 200 million surveillance cameras have been installed in China to aid in 'policing' the Social Credit system. The curatorial title Ruizhi (intelligence) may also describe China's ambition to develop artificial intelligence, and technology in the arts and everyday life, as well as the formation, building and social-engineering of a smart city. This artwork is a snapshot of the image surveillance economy in China.

Fei Jun's work as an example of an image surveillance environment, can be explained as two conceptual layers: through identification and through experiencing the system. A camera captures visitors who approach the lens media projections in real-time. The artificial intelligence programme identified a handful of prescribed identities of the visitors, in rather limited keywords and categories (Fig. 1). I was identified as a 'dancing-master' because of my body movement, even though I am not good at dancing. Two other 'dancing masters' were also identified. Identification is also performed through a colour-coding system: an old man, a tourist, a Floridian, a couple as 'kin,' a shoulder bag and an evening bag. These categories could be understood precisely as context-specific keywords, with biennale visitors inevitably falling into some of the categories based on prediction, rather than identification. The 'identification' was constantly mutating and ever shifting. A moment afterwards more categories were identified: a guard, a Japanese, an instigator, a gal, a grandfather, a saunterer, and a clutch bag.

Questions arise. Is *Interesting World* a functional and activated face recognition system? Is it a live recording for image data mining? What was the database of the prescribed identity and categories? Are we, the visitors, being watched, data-mined, analysed, and archived? (Was there a consent form available to sign and agree

Figure 1: Fei Jun's *Interesting World* at the China Pavilion, Venice Biennale 2019.

to before participating in this work?)[3] Or is it just an offline façade to demonstrate China's world power in imaging technology, artificial intelligence, and state's surveillance in a major world visual arts exposition? Unlike the state surveillance system in China or any in other geopolitical configuration, visitors stand in front of and experience the two sides of image technology: the capturing, by a surveillance camera and the analytics, through the visualization (such as color-coding, keywords, categories, and identities). The experience is produced by a choreographed and performative act of artificial intelligence to demonstrate China's place in world power relations; and at the back end of the work, perhaps, there is no database, no network, or network unavailable.

Fei Jun's *Interesting World* at the Venice Biennale 2019 provides a critical narrative to examine the performativity aspect of net art. Net art resides, substantiates, and exhibits on or through the network. A presumably offline network may not give permission to constitute how a network is created and responded in an artistic practice. Rather, *Interesting World* performs network culture in China as a matter of image surveillance, body and gestural identification, and social monitoring and engineering that are of national interest and identity: therefore, it makes perfect sense to exhibit this work in a national pavilion in a major contemporary art world exposition. The work is a performance of cyber nationalism and the political economy of technology in China rather than facilitating and executing performativity of net art. The unavailable network demonstrated here describes technological backwardness merely through displaying rather than executing. Technological backwardness, intriguingly, could be considered as a postcolonial tactic. Disconnecting the network so as to perform and operate similarly to a network are tactical tools to contextualize this work in the discussion of network culture and contemporary arts in China. It is a statement of 'intelligence' and ambition, even though it may not be working at all.

This essay will summarize the notion of unavailable network as it pertains to the political aspect of everyday life in Chinese

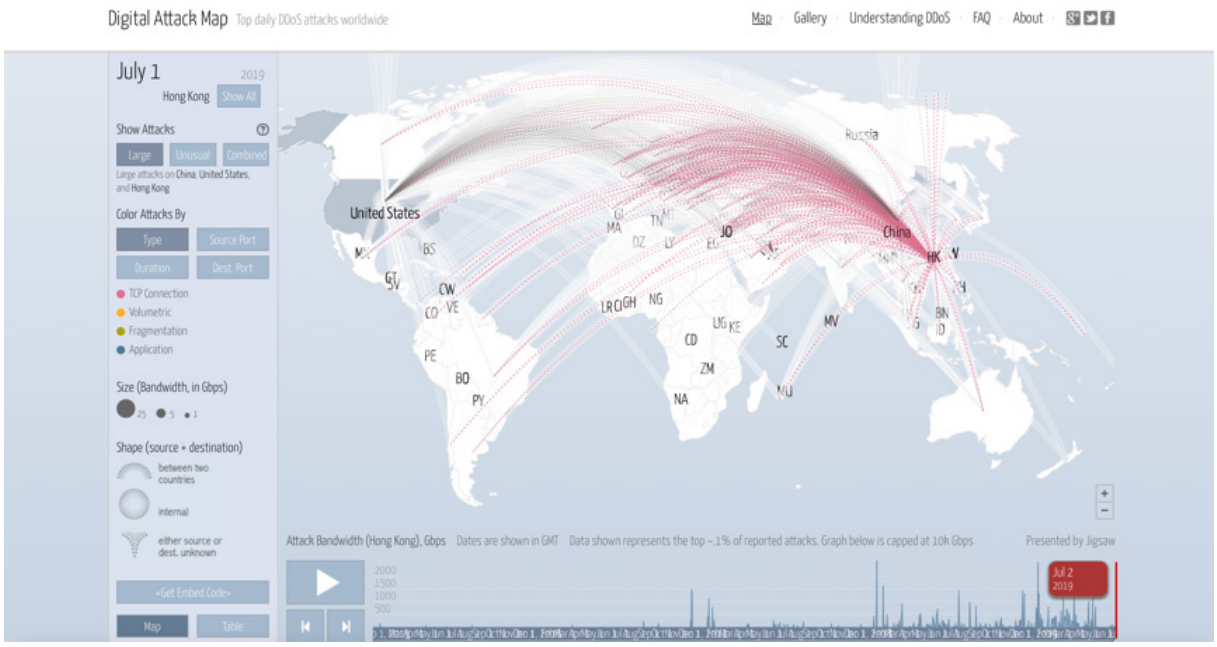
network culture. Let's take Hong Kong 2019 protest and the flow of information involved as an example. Protester's communication and grassroots propaganda of the Hong Kong 2019 protest relies heavily on network technology. We see, read, and produce pro-democratic persuasive statements, be they textual, visual or temporal, on social media. However, censorship of information by authoritarian government does occur as responses to the rise of digital activism. The censorship tactics here does not only refer to the filtering and banning of online information but an assumption to shut down the Internet silence public opinion and pro-democratic demand. For example, the messaging app Telegram has been widely used by citizens and protesters in Hong Kong to communicate, and yet the app and certain pro-democratic chat groups had also received massive cyber-attacks during the yearlong protest. Citizens and protesters have also communicated via a peer-to-peer network to avoid state surveillance from the government authority and an anticipated Internet shutdown.

A particular type of Internet meme is created that is operated and circulated via peer-to-peer network and targeted to reach those who may spend their time mostly offline and who perhaps are apolitical. For example, the 'elderly meme', as the name suggests, is a type of Internet meme that is popular amongst senior citizens in the Chinese context and originally may not be made and meant for political persuasion. Its image-stylistics, often involving the juxtaposition of Buddhist symbols, icons, and text, characterizes itself as an image apparatus that disconnects from the network and the discourse of social and digital activism.[4] During Hong Kong's Anti-Extradition Bill Protest in 2019, the elderly meme becomes spreadable and popular. This kind of meme also highlights how the use of peer-to-peer network works in the public sphere at a critical moment when no public network is available. Elderly memes involving pro-democratic messages to the Hong Kong's government and Chinese Communist Party is sent through airdrop (via Bluetooth) that iPhone users can choose to accept (or decline) in the public domain. Intriguingly, however, Android users seems to be excluded from such an alternative network model. Notwithstanding, the elderly meme establishes the process of decentralization of disseminating images and information. An alternative 'propagandist network' is created because of the fear of unavailable network (Fig. 2).

www.lihkg.com, a web-based Bulletin Board System (BBS)/forum, which could be considered a Hong Kong version of Reddit, is the platform of information dissemination amongst the protesters during the Anti-Extradition Bill Protest in Hong Kong. However, for many occasions during the 2019 protest many BBS platforms in Hong Kong were bombarded with Distributed Denial-of-Service (DDoS) attacks that temporarily terminated communication between the protesters for a short period of time until the gateway and service could come back online (Fig. 3). The fear of an inaccessible and unavailable network, that also implies and associates to fundamental Expression of Freedom and democracy amongst Hong Kong's citizen had been heightened. Livestream videos by photojournalists and citizen photojournalists were broadcast via social media platforms, such as Facebook and Instagram. However, the great number of reactions by viewers such as 'like,' 'love,' or 'angry,' for the broadcasted video would experience a time lag because of information overloading. Viewers' reactions can be made with just a click of the button, bandwidth was often limited. The temporality of the network, real-time viewing, and reaction are complex in the sense that it is not a linear progression but are many micro-networks *per se.*

Figure. 2: The Elderly Meme in Hong Kong, first generated and sent via Bluetooth then printed out and given post-digital existence.

Figure 3: The visualization of DDoS attack by the Digital Attack Map on the 1st July 2019.



Overloaded bandwidth was also not unusual at the protest site. With a mass amount of data traffic by protesters constantly checking chats, threads, maps, and video-streaming, the public Wi-Fi and the mobile data network were so overloaded that it could not. What Hong Kong protesters experienced during the yearlong protest are on the both edges of the Internet: networks that bring people and pro-democratic demands together; networks that may disappoint us because they could not function as the way it promised. The aforementioned examples of network behavior are linked to network unavailability as a way to control information. This not only reveals the public fear of network unavailability, but also the fatigue and fragility of any publicly available network.

What is the lesson learned from the 2019 protests in Hong Kong that is related to network culture? It could be referred to the naming of the protest itself: the water revolution. 'Be water' is a common saying amongst the protesters in Hong Kong. It originated from Bruce Lee's catchphrase "Be Water, My Friend" from the 1960s and 1970s Hong Kong that describes the capacity, volume, and strength of water in the Chinese Kung Fu manner. In 2019 the saying stressed the importance of fluidity, which is the exact opposite of the 2014 umbrella movement: solidity and occupying. Here, the water political metaphor is extended to describe the network. It aspires and advocates a formless and fluid network that is non-hierarchical by nature. Referencing the recent anti-totalitarian regime protest globally, the formless and shapeless network is explained through street-smart, decentralized, guerilla tactics. The notion of network, also, becomes a decision-making process rather than a social engineering structure. A pre-empt network formation is often top-down structure that facilitates managerialism and thus social control. What occurred in the Hong Kong protests of 2019 is the opposite way of thinking about networks; it is a tactical way of network forming that is based on decisions made in-situ, and is often ephemeral. The network would be dissolved once the situation is resolved by certain decisions made, and another network may evolve as another situation arises. The reason to introduce the water metaphor to conclude an essay on unavailable networks in China is explained through: (1) networks are political and geopolitical; (2) the advancement and universality of an available network could be a façade; and (3) the discussion of networks should go beyond mere structuralism and emphasize the everyday life, tactical, and microscopic decision-making process.

The aforementioned case studies, the Great Firewall and the Golden Shield, *Interesting World*, and the network happenings in the Hong Kong 2019 protest, illustrates certain phenomena of network unavailability such as provision, challenges, and resistance to the network culture in the contemporary Chinese context. Will China become an alternative 'democratic' network model as opposed to the Eurocentric and dominating Internet? It is dangerous to assert democracy is happening in the network culture in China. In the essay, I illustrate, and hence problematize what has been unacknowledged in the discussion of network culture by using China as an example. The China model serves as model of dialectical reasoning to critically rethink and reexamine global network culture through a post-colonial and technological decolonization gaze.

Throughout the 2019 Hong Kong protests the Hong Kong government advocated the imposition of the Emergency Regulations Ordinance (ERO) that would exercise regulation and control of information on the Internet that would include regulating or banning the Telegram messaging app and shutting down pro-democratic web-based forums such as

www.lihkg.com. The Emergency Regulations Ordinance, if exercised in the future, could be seen as the extension of and rerouting to the Great Firewall of China. The Ordinance itself is controversial and yet it hints at the end of freedom of expression, speech, and the flow of Information. The fake news incidents also suggest China's position in controlling and manipulating public opinion and information in the global arena. All this suggests a new China's model of unavailable network that seems distant and yet it is happening. In the course of writing, while the Sino-American relationship becomes more intense, the Chinese government has already taken action to introduce the National Security Law in Hong Kong that will immensely reshape the global dynamic of politics, economy, and information structure and practice in Hong Kong and beyond.

In May 2020, following the Executive Order on Preventing Online Censorship by the White House, social media tycoon Mark Zuckerberg was 'worried' that the Chinese model would be influence and replicated by 'other' countries, and he urged the Western countries to take the initiative and cooperation on Internet regulation "globally".[5] In the Pan-Asia context, the 'Remove China Apps', an mobile application that identifies and helps removing apps of Chinese origin developed by OneTouch AppLabs, an India-based startup company, received more than one million download when it was first launched in May 2020. The developmental trajectories of networks in the global arena is moving towards making networks unavailable, and the China example could be introduced as a reasoning for this, or the reason itself. The rival over the control of networks and information technology prevents, and also establishes, the network unavailable phenomenon by and large: of China and the West, the replica and the original, the powerful and the other powerful. Nationalism and netionalism are inevitably connected. The utopic globalism of information (without borders) is in danger. Globalization was a promise to humankind in the twentieth Century. Globalization without deimperialization is hypocritical, as Chen argues at the very beginning of the essay. What we are facing in the twenty-first century, however, is a dialectics of disguise and reproduction. If China is the future, dare I ask, would the China model otherwise have the potential to influence post-globalized information structure? Will 'network unavailable', state authoritarianism, and protectionism be an inevitable network future?

Acknowledgement

I would like to thank the anonymous reviewer(s) and Sudipto Basu's suggestion for academic literature in postcolonial studies and network culture.

Notes

[1] “Top 20 Countries with the Highest Number of Internet Users.” Internet World Stats, 2019. https://www.internetworldstats.com/top20.htm/. Accessed 10 April 2020.

[2] “WeChatSCOPE: an insight to censorship in China.” Journalism and Media Studies Centre, The University of Hong Kong, 2018. https://wechatscope.jmsc.hku.hk. Accessed 10 April 2020

[3] The question seems unnecessary but Shu-Lea Cheang, a media artist who represents Taiwan in the Venice Biennale 2019, also has her take on surveillance and technology at Palazzo delle Prigioni, a former Venetian prison. Before visitors walking into the site-specific installation work, a privacy policy in accordance to the EU regulation with regard to the processing of personal data and on the free movement of such data is shown to the visitor.

[4] Please refer to the Elderly Meme Generator. http://files.rei.idv.tw/thumb/older.html. Accessed 10 April 2020.

[5] For details of the Executive Order from the White House, please see https://www.whitehouse.gov/presidential-actions/executive-order-preventing-online-censorship/. Accessed 5 June 2020.

Works cited

Bratton, Benjamin. “The Black Stack.” *e-flux* journal #53. March 2014. https://www.e-flux.com/journal/53/59883/the-black-stack/ Accessed 10 April 2020.

Chen, Kuan-Hsing. *Asia as Method: Towards Deimperialization*. Duke University Press, 2010.

Griffith, James. *The Great Firewall of China: How to Build and Control an Alternative Version of the Internet*. Zed Books. 2019.

Jandrić, Petar and Ana Kuzmanić. “Digital Post-colonialism.” In *IADIS International Journal on WWW/Internet*. Vol. 13. No. 2, 2015, pp. 34-51.

Li, Luzhou, *Zoning China: Online Video, Popular Culture, and the Taste*. The MIT Press, 2019.

Mailland, Julien and Kevin Driscoll. *Minitel: Welcome to the Internet*. The MIT Press, 2017.

Neves, Joshua. *Underglobalization: Beijing’s Media Urbanism and the Chimera of Legitimacy*. Duke University Press, 2020.

Repnikova, Maria and Kecheng Fang. “Authoritarian Participatory Persuasion 2.0: Netizens as Thought Work Collaborators in China.” In *Journal of Contemporary China*, Vol. 27, p. 113, 2018, pp. 763-779.

Said, Edward. *Culture and Imperialism*. Vintage Books, 1993.

Schneider, Florian. *China’s Digital Nationalism*. Oxford University Press, 2018.

CONTRIBUTORS

Sudipto Basu is a PhD scholar and Jr. Research Fellow in Cinema Studies at JNU, New Delhi. His work on the politics/aesthetics of extractivist infrastructures is built upon prior experiences as a civil engineer. He is also the co-director of *Tracts of Dust* (2018), an experimental video on the ghostly infrastructures of Kolkata's failed smart city ambitions; screened at Bangkok Biennale & MCAM Shanghai.

Wenhao Bi is a PhD student at the Centre for Interdisciplinary Methodologies at the University of Warwick. He holds an MA in cultural studies from Shanghai University. His research interests cover digital identities, political involvement, and everyday practices on social media. His current research looks at young Chinese people's subjectivity through their digital political participation.

Nicola Bozzi is a freelance writer, lecturer and cultural critic. His main research interests are the circulation of globalised identities and the role of art in contemporary society. You can follow him on schizocities.com or @schizocities.

Iuliia Glushneva is a Ph.D. candidate in Film and Moving Image Studies and one of the coordinators of the Global Emergent Media Lab at Concordia University (Canada). Her current research deals with the role of linguistic translation in global media flows, with a particular focus on the histories of translation's engagement with technology and on translation practices in (post)socialist screen cultures.

Rebecca Holt is a PhD candidate in Film and Moving Image Studies at Concordia University, Montreal. For her dissertation, Rebecca is researching MindGeek—the company responsible for Pornhub and most other popular pornographic platforms. Rebecca locates MindGeek alongside other tech giants to understand the impact of online pornography on digital culture, new economies, and the Internet at large. She is a coordinator and member of the Global Emergent Media Lab at Concordia University.

Özgün Eylül İşcen is a media theorist whose scholarship often engages with artistic and philosophical practice. She is currently completing her PhD degree in Computational Media, Arts and Cultures at Duke University, and she will continue her research as a postdoctoral fellow at the ICI Berlin.

Linda Kronman is a media artist, designer and currently a PhD candidate at the University of Bergen (Norway) researching how machine vision is represented in digital art as a part of the *Machine Vision in Everyday Life* project. As a part of artist duo KairUs she and has been producing art together with Andreas Zingerle including research topics such as surveillance, smart cities, IoT, cybercrime, online fraud, electronic waste and machine vision.

Wing Ki Lee is an artist-researcher based in Hong Kong. He is currently Assistant Professor in photography and Programme Director of BA (Hons) in Visual Arts at the Academy of Visual Arts, Hong Kong Baptist University, as well as a curatorial member of 1a space, an independent art space in Hong Kong.

Juan Pablo Pacheco is an artist and writer, whose research reflects on the poetic and material entanglements between digital technology and political, ecological, and social systems. He holds an MFA from the San Francisco Art Institute. For more information visit www.juanpablopacheco.com.

Cristina Thorstenberg Ribas is currently a Pos Doc researcher in PPGAV – Programa de Pós Graduação em Artes / Instituto de Artes, UFRGS, financed by CAPES/ Brazil. Develops projects in the interface of politics and aesthetics, militant research and radical pedagogy. Launched the open platform Desarquivo.org. In 2011. She is part of the network Red Conceptualismos del Sur. More:http://www.cristinaribas.org

Giseli Vasconcelos is an interdisciplinary artist and project manager from Brazil based in the US. She has been organizing festivals, workshops, exhibitions and publications mobilising the Brazilian scene of art and activism, designing collaborative processes developing tactical media and radical pedagogies related to internet culture. Presented in several places such as Quito/ LabSurLab, Amsterdam/N5M, New Delhi/Sarai, Vienna/MQ21, Berlin/Radical Networks, São Paulo, Rio and more.

Tatiana Wells is a researcher, tactical arts and free media events producer of festivals, workshops, publications and residencies in the interstices of critical art and grassroots media practices in Brazil. http://midiatatica.info Phd candidate in the University of Liverpool. Writes about Cyberfeminism and Low-tech media appropriations. Her personal blog devises about decolonial practices and theories http://baobavoador.noblogs.org Last but not least, she is also a vegan cook in the village of Pipa (Rio Grande do Norte).