

# Material Cloud. Techno-Essentialism in Media Art

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Since the beginning of the arts, they have seeped into the technosphere, although it was not an easy territory to encroach on. Artists have creatively altered machines and devices designed for utilitarian purposes or they have “sponged off” of the existing systems of communications (mail and telematic art). Trailblazers made attempts in this area as soon as early computers had emerged, gradually shifting the boundary of the creative application of communications media towards art. And arts sought a “hole in space” (Kit Galloway and Sherrie Rabinowitz), exceeding beyond interpassive consumption within the creative use of technical innovation. There were attempts to create “a third culture” [Kluszczyński 24] that could allow for the cooperation between artists and representatives of the world of science as well as new technology innovators. However, aside from a handful of examples (E.A.T., Steina and Woody Vasulka), they mostly led to the reinforcement of stereotypes discussed, e.g. by Florian Cramer, according to which the arts

were perceived as romanticist fantasies against the backdrop of arts and humanities and in opposition to rational science, and its product, technology [124]. Few artists (Edward Ihnatowicz, Douglas Davis)<sup>1</sup> have made efforts to disrupt the pattern of a relationship where technology affects the arts, while the arts merely “depict” technology [Cramer 122]. In most cases, however, the dream of converging arts and technology has not gone beyond slogans, which, additionally, were reiterated by one side only, meaning, the artists. The activities in this area were also limited to a section of the 20th-century avant-garde and the situation remained unchanged for decades until broadband internet became widely accessible. As Tim Berners-Lee noted when differentiating between the technical infrastructure (the net) and the structure of connections (the web): “The Web made the net useful” [2]. This is when technoculture emerged within the technosphere and quickly transformed from a space that had offered alternative solutions to arts and promised a perspective of freedom of speech into a mirror reflection of offline culture. Technopoly, anticipated by Neil Postman, revived the hierarchies of access disguised as an attractive gadget as well as consumerism driven by technological novelties, and exploitation of prosumer-users. The emergence of iPhones has made technoculture reach mass proportions, making it lose its connections to an artistic avant-garde. According to Andreas Broeckmann, it brought an end to new media in the arts and “the future is no longer a mystical, utopian site, but merely the time for the next version update” [320-321].<sup>2</sup> In

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1 The sample names of the artists given in parentheses do not appear in Florian Cramer's text but have been selected by the author.

2 Andreas Broeckmann was the artistic director at Transmediale between 2000-2007.

the face of creativity developing on a global scale but precariously exploited, the crisis of hierarchy in the world of the arts is advancing, leaving many artists no choice but to perpetuate prosumption stimulated by the constant need to join the elites. Consequently, the place of the arts is dangerously inching towards one of the branches of numerous “creative industries.” Hence, the arts of the so-called new media sometimes resemble a production of showy, designer gadgets while postmedia art operates in the rhetoric of crisis and self-irony, echoing postmodern attitudes. Florian Cramer observed that techno-determinism, forecasted in the 1990s by Friedrich Kittler, today is a fact though the artistic world needed two decades to realize it [122]. One example is the famous statement made by Claire Bishop on the pages of “Artforum”, which revealed the ignorance of the circle of mainstream art critics regarding the existence of arts that employed the media of technology [434-442]. Therefore, if “technology has become parts of the «creative industry»” [Cramer 122], and “a paradigm shift from «arts» toward «creative industry»” [123] happens on technology’s terms, then how can artists, who are aware of the technological hegemony, go beyond that paradigm? The more so – as observed by the German theoretician – that contemporary cultural discourse is still technocentric, which is evidenced by the formula of “a lab”, so commonly used in the names of numerous artistic initiatives [Cramer 123; Latour 163-192]. However, as noted by Cramer, “Contemporary phenomena, such as post-internet art grew straight out of the contemporary art system, not out of media labs” [...]. [124]. While it is true that art can be – and has been – a laboratory, which is mentioned by a number of authors [Ożóg 15; Zawojski 13], it

does not mean in the sense of producing technological novelties, but rather in the sense of the formula of workshop experimenting aimed at working through concepts that are key for the culture and which artists tend to notice first. Art as “a system of early warning” [McLuhan 59] is sensitive to the effects of a culture transforming into its postmedial version, which is not characterized, despite what may appear, by the atrophy of media, but by all the cultural components undergoing mediatization. Consequently, if there is no special place in the postmedial culture for the technosphere, what criteria could be established when the dualistic split into the real and virtual has no application but a purely rhetorical one? It seems that techno-determinism, which was discussed by researchers of the 1990s, today could be reinterpreted as techno-essentialism based on searching for meanings and hidden agendas beneath the surface visible to all. Therefore, artists and theoreticians have recently been drawn to the elements of technical infrastructure that are linked to the exploration of the space between geography (including dark geography with the elements of critical cartography), ecological and political activism (a reflection on the Anthropocene) as well as hacking tactics. Both theoreticians and artists<sup>3</sup> have made an interdisciplinary contribution to this field, which is referred to as critical infrastructural studies.

### **Infrastructural studies**

Research in the area of techno-essentialism based on theory and artistic theory-practice has produced publications on the history of technical infrastructure as a vital factor

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3 In all cases, when writing about theoreticians and artists, I always refer to both genders.

shaping the bedrock of contemporary culture. The distinction between hardware and software was metaphorized as early as the 1960s (Les Levine, Jack Burnham); however, while software studies have developed into an independent research discipline (Lev Manovich), hardware studies have never made it to the critical humanistic thought. Probably, the lack of interest could be attributed to what Tim Berners-Lee observed as: “people don’t really want to know about computers and cables” [2]. Cyberspace metaphors stimulated imagination more and seemed to get significantly more traction. Nevertheless, when the utopia of free cyberspace started to dissipate [Sterling 114], only to finally disappear in the face of the growing “paranoia of security,” clever metaphors gained new meanings. Coined for the rhetoric of cyberspace conquest and reinforced by the Californian ideology (“Wired” magazine), notions such as the “cloud” began inspiring once more in the era of socio-political crises. It was then that Bruno Latour’s actor-network theory (ANT) contributed to the development of theoretical work on factors previously overlooked. The theory points to a vital actor of contemporary culture in technical infrastructure, which is discussed, e.g. by Tung-Hui Hu, the author of the book *A Prehistory of the Cloud* (2015). When justifying his approach, Hu explains a “concept from computer science, which typically divides a technical apparatus into a series of so-called abstraction layers. These layers move progressively from the least abstract to the most abstract” [XXV]. Such a layer-based approach is also applied by Benjamin Bratton in his book *The Stack* (2016). The title *Stack* is a metaphor for the global megastructure comprised of six layers, which are *Earth, Cloud, City, Address, Inter-*

*face*, and *User*. Indeed, increasingly more is published on the so-called information architecture, which includes, e.g. server rooms, data processing servers, and other objects of technical infrastructure, even cabling. Some of the publications have a popularizing character [Blum], while others have more ambitious research goals, such as Ingrid Burrington's book *Networks of New York* (2016), which is a guide to New York's internet. The author unveils the structure of network connections, for which she searches in dugouts that expose the routing of cables, teletechnical boxes, and telecommunication manholes. Her approach goes beyond description as her book advances "infrastructural studies" towards activist "infrastructural interventions."

Inquisitiveness within artistic practice is coupled with reflections on the phenomena and notions that have been so universally absorbed that they are virtually unquestioned. Mark Weiser had a vision of ubiquitous computing [94], and today "[it] is a fact: technologies have become embedded in our everyday life; they are intuitive, natural, and invisible, but by no means are they neutral" [Ozóg 98]. The paradigm of the ubicomp has defined our perception of mediatized components of reality and affected our lexicon as well as our perception of the world order. Hence, as Ted Nelson, who is one of the principal champions for freedom on the Web, ironically puts it, the goal of increasingly new technologies is the subjugation of the users in the name of the motto: WYSiWHAM (What you See is Wonderfully, Happily, Absolutely Mandatory)<sup>4</sup> [196]. Not everyone,

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4 A reference to an IT term WYSIWYG (What You See is What You Get).

however, complies with this enforced perspective and they search for meanings hidden underneath the surface. As Domenico Quaranta observes in his text featured in Evan Roth's exhibition catalog, this is because "today, it's pretty different. We know that the Internet is real and what happens online is real. [...] We know that there are companies that are worth billions thanks to our data. We have seen pictures of data centers, maps of the undersea cable, construction sites with a sign saying that the fiber-optic is coming soon. [...] today our perception of the internet is less mystical and more secular and prosaic" [43]. For this reason, Roth travels to places where the internet is physically present: in the form of the fiber-optic cable.

### **Webspace politics**

At the meeting point of media art, critical art, and post-conceptual art is the evolving trend of dark geography as part of experimental geography [Paglen 27-33; Wójtowicz 18-27]. It seems to be a reaction to "the last 150 years of intense dematerialization" [Baumgärtel 61]. Aside from Evan Roth, artists exploring the geographical space (literally speaking) and the dataspace (metaphorically speaking) include James Bridle, Emma Charles, and Trevor Paglen, among others. Some artists (Liam Young, Graham Harwood) focus on geological and ecological aspects, analyzing the processes of obtaining natural resources necessary for sustaining the production of electronic devices. Others, such as Ursula Biemann, Marko Pelijhan or Stéphane Degoutin and Gwenola Wagon, study the effects of the destructive influence of the Anthropocene on humankind and nature. The above-mentioned artists share an inter-

est in “fieldwork”, motivated by the push to capture the essence of what shapes contemporary culture, that is, the circulation of information. Since the beginning of cyberculture, this circulation, which has been metaphorized in a variety of ways, has been typically described with a lexicon that emphasizes the non-materiality of information and the immediacy of its message. However, as noted by Tung-Hui Hu, “over the last twenty years, the Internet has been variously described as a «series of tubes, », an «information superhighway, » an «ecosystem, » a «commons, » a «rhizome, » a «simulacra, » a «cloud» etc. [...] Each term brings with it an implicit politics of space [...] [XXIV]. Therefore, it is a politics of space and this space’s “production,” discussed first by Henri Lefebvre and later by Trevor Paglen [29], that is the exit point both for a reflection and a completely real effort in the journey. When analyzing the prehistory of the “cloud” in the context of its material expressions, Tung-Hui Hu argues how little truth there is in this amorphic– yet imagination-stimulating – metaphor. Evan Roth takes a similar stand in the field of art, concluding that in the face of growing internet invigilation (the disclosed facts include, e.g. the activity of the NSA), the metaphor of the “cloud” seems particularly incompatible with the shape of today’s Web. The last several projects of Roth are a result of his travels to the places that have a very concrete connection to the functioning of the technological base of the internet. For instance, in Porthcurno on the British coast of Cornwall, FLAG (Fiber-optic Link Around the Globe) is submerged in the sea. This place is marked with a pyramid-shaped monument commemorating the exit point where the first telegraphic cable reached

beyond the Old Continent and enabled a connection with America. Hence, it is an example of “overwriting” (an informatics metaphor) or, as Hu puts it, “graft” [7] (a nature metaphor) of a newer medium onto the old one. The fact that the internet covers quite real, geographical distances typically remains unnoticed by the users, as long as their reception comfort is not disrupted. This is the area of focus for Roth, who visits the places where the intercontinental fiber-optic cables emerge from the sea and come onto the land (or vice versa). The artist has recorded them on devices used by paranormal activity hunters as well as on infrared photographs and movies.<sup>5</sup> Roth chose this technique because when the recorded images reach the viewer, for a moment – when they are data traveling instantaneously down the fiber-optic – they transform into infrared. This is the core of his newest work *Red Lines* (2018-2019),<sup>6</sup> which is comprised of a year’s transmission of images from several places around the world to any screen-based device with access to the Web, most often the fiber-optic net. The location is crucial in this project: the servers supporting the project are located in the same countries as the fiber-optic cable that is the subject of a given video while the audience can watch it on the screens of their private devices, and not a gallery. The transmission of a video in red is nearly still, providing a viewer with a sense of belonging to the p2p network. However, the clash of the static shot with the dynamics of communication rendered via media (e.g. via messages on a smartphone screen) reminds us about the autotelic dimension of this work. These “internet land-

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5 For instance: <http://n57.888698e11.688815.se/>.

6 <http://redlines.network>.

scapes” point to an overlap of the spheres of nature and technology, but also an intersection of the material and the digital. Therefore, a transmitter reminds us about its transmission. It is important in so far as the “cloud buries or hides its physical location by design” [Hu 3]. In his other project, the sculpture installation *Burial Ceremony* (2015), Roth used two kilometers’ worth of a multi-core GYTA53 fiber-optic cable.<sup>7</sup> The cable, insulated with black shiny plastic and rolled in the figure-eight, was not laid out this way to resemble the mathematical symbol for infinity, but for nakedly practical reasons: it prevents damage to the precious cable when it is not wound on a spool. The artist explains that this display of the material as well as the aesthetic properties of the fiber-optic cable is a form of raising a monument to the internet, reminding us about its typically unnoticeable features. In *Art Happens Here* (2015), Roth makes a reference to the work of the internet art pioneers, the New York duet MTA *Simple Net Art Diagram* (1997). A straightforward drawing resembling a fragment of a technical figure suggested that art “happens” in the connection process between two nodes – computers – and, implicitly, their users. Roth, however, treats this diagram per se, illustrating the actual course of this communication, the intercontinental path. It brings to mind *The Routes of Man* (2011) described by Ted Conover, and, yet again, Tung-Hui Hu’s reflection on the dismantlement of railway tracks in the United States and running fiber-optic cables along their network [1]. This way, the preexisting communications infrastructure dating back

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7 An optic-fiber cable protected with a waterproof casing is designed to be buried underground or submerged in seawater.

to the machine era is used. Hu (who is also a poet) applies a botanical metaphor here, “the structure of the Internet resembles a *graft*: a newer network grafted on top of an older, more established network. In this metaphor, preexisting infrastructures, such as the rail network, are like rootstock, while the newer fiber-optic cables resemble the uppermost portion, known in horticulture as the scion” [7]. Indeed, the example of Emma Charles’ work entitled *Fragments on Machines* (2013)<sup>8</sup> illustrates how virtual capital resources (whose flow is possible thanks to the smooth work of the net) are “grafted” onto the architectural foundation of New York’s financial district, which goes back to the era of the industrial economy. Charles’ work is a study of unnoticeable components of the economy, that is, the “technical support” (to paraphrase Rosalind Krauss’s term), which is provided to market players by computers, servers, and cables. The shift of the camera, which follows the route of New York’s metro, gradually descending underground, leads the viewer to enclosed spaces of technical facilities designed to maintain data circulation. This physical presence of the infrastructure is simultaneously a representation of virtuality – its hardly attractive but true face. It has a specific meaning because the closer stock market trading companies are to their computers, the faster the HFT (high-frequency trade) processes are.

In their film essay *World Brain* (2015), Stéphane Degoutin and Gwenola Wagon view information as a nonhuman actor covering the route defined by fiber-optic cables hidden

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8 The title of the work is a reference to *A Fragment on Machines* included in Karl Marx’s *Outlines of the Critique of Political Economy*.

in underground tunnels of sprawling metropolises as well as those running down the bottom of the oceans, connecting the continents. It brings forth the physical aspects of information, which, although it may seem nonmaterial and instantaneous, depends on its supporting infrastructure and architecture. The latter is not indifferent to the natural environment; the ecology of immense data centers, which consume fossil-fuel energy, is mostly absent from the rhetoric that advertises servers' capacity and the speed of the broadband transmission. As Hu concludes with bitterness: "A new \$1.5 billion fiber-optic cable across the Arctic will shave between twenty and sixty milliseconds off the route from Tokyo to London for stock market traders, but the toxic metals used in their electronics inevitably end back up in the bodies of laborers manning poorly regulated disassembly plants in China. Their bodies are absent from the picture, just as the Chinese bodies of railroad workers are absent from nineteenth-century railroad photographs" [3].

The direct relationship between electronic consumption and ecology is revealed in the project *Rare Earthenware* (2015) by the British collective Unknown Fields Division. Liam Young and his team traveled to China to take samples from the toxic lake in Baotou, Inner Mongolia. This lake contains substances that come from the waste produced in the extraction of the so-called Rare Earth Elements (REE), necessary for the manufacture of electronic devices on a global scale. Using traditional pottery techniques, the tarry substance retrieved from that area was turned into three vases of different scales, whose shape resembled the Ming Dynasty ceramics. Each of them corresponded to the

amount of energy necessary for the life of such devices as a smartphone, laptop and one module of an electric car battery. These vases were displayed at the exhibition entitled *What is Luxury?* (2015) at London's Victoria & Albert Museum. The work by Unknown Fields Division materializes what is pushed out and omitted in technoculture, because as Hu reminds us: "For the legacy of the cloud has already begun to write itself into the real environment. [It is] one of the largest consumers of coal energy" [XXIV]. The so-called coltan wars provide even more drastic examples of the relationship between the technosphere and ecology. These wars have been waged in countries such as Congo,<sup>9</sup> where raw materials necessary for the manufacture of electronic devices are extracted. One of these elements is tantalum, and coltan is its derivative. The issue of the inconvenient relationship with the consumer needs of "the first world" is the subject of the work *Tantalum Memorial* (2008) by the collective YoHa.<sup>10</sup> Both projects rendered sublime what normally remains an invisible and "dirty" (literally and in the ethical sense) layer of technoculture, and no further commentary was necessary.

### **Essentialism in the technosphere**

A question arises: what is the point of unmasking what seems obvious and lacking a double meaning, such as the course of cabling, methods of extracting raw materials or device production processes? The very cognitive process is valuable

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9 According to the data obtained from YoHa's website, the death toll of the coltan wars, which have been waged since 1998, may total as many as 4 million lives. <http://yoha.co.uk/tantalum>.

10 The collective is primarily comprised of Graham Harwood and Matsuko Yokokoji. The discussed project was created in collaboration with Richard Wright.

because “the hidden aspects of the media are the things that [...] have an irresistible force when invisible. When these factors remain ignored, remain invisible, they have an absolute power over the user” [McLuhan 1977]. After nearly four decades, Tung-Hui Hu frames it similarly: “if the cloud represents a new reconfiguration of the relationship between place and placelessness, it is clear that relationship directly affects the organization of contemporary power” [3]. Artists representing the theory-practice approach within critical infrastructural studies share an interest in tracking the course of technical infrastructure, which often runs along the pre-existing communications channels. Their perspective, which may also be referred to as techno-essentialist, is not limited to unequivocal criticism; instead, it operates with facts. This attitude results from the need to reach the essence: of information, technology, or infrastructure. It requires an analytical approach and transparent methods of work with the medium used (a neutral recording of the video and sound, no aestheticizing, a focus on the process). It additionally reminds us of the times when “art, activism, and media fundamentally reconfigured each other – from a distance” [Neumark 3]. However, today’s approach has a different view of materiality and covering physical distance. Telematic art and cyberculture encourage decoupling the signal from the material object; techno-essentialism practiced by the artists engaged in critical infrastructural studies allows us to see this object anew, for instance, via the re-materialization of communications’ metaphors.

**Translated by Katarzyna Szuster-Tardi**

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