e-flux journal

issue #74

06 / 2016

e-flux Journal is a monthly art publication featuring essays and contributions by some of the most engaged artists and thinkers working today. The journal is available online, in PDF format, and in print through a network of distributors.

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Editorial— “Art Ontologies of Silicon Valley”

Tech is never simply technology. It never appears in the abstract, any more than the characters “H2O” appear anywhere on water. Tech is always specific. How old should someone be when they first have sex? How old before they get their first cell phone? This sequence unsettles us because it is hard to think about either inevitability. Sex and technology are instruments of desire, the objects and system of adult unfreedom. Children at play are so analog. Young is life before text. We clutched love letters, in the past, when we couldn’t clutch each other. Now our phones get warm and vibrate. Eventually, they die. As a proxy for a body, technology is never better than the next best thing. Too often, it’s the only one. Today the image of the beloved appears most against the canvas of the phone, carved into polymer, inscribed onto text messages, recorded in electronic memory. Our relationships with our phones are our relationships, most of the time.

Any ontology of Silicon Valley must include this new technics of reproduction, considered in this issue by Lee Mackinnon in “Love Machines and the Tinder Bot Bildungsroman.” After all, the moniker “Silicon Valley” signifies more than the source of our immediate gizmos of desire. It also serves as a desirable object in its own right. In “Asynchronous! On the Sublime Administration of the Everyday,” Mike Pepi details how the appeal of non-linear processing has birthed a raft of new management techniques named like sports drinks: Agile and Lean. In the ascendant project of technocracy, these new philosophies represent new techniques of governance. In “The Artist-in-Consultance: Welcome to the New Management,” Elvia Wilk compares the role of resident corporate artists to management consultants. Both are exogenous scolds, enlisted to shame and discipline communities and to anticipate their weaknesses.

In “Light Industry: Toxic Waste and Pastoral Capitalism,” Ingrid Burrington examines the material history of Silicon Valley, both above and below ground. Santa Clara County is a place, distinguished not only by its geographical location but by its historical one as well. It is not all technology, all the time: it is this technology, here and now.

Is the Valley interested in art? Even if today we bathe in high-tech culture, what is high tech-culture? Does it exist? “They have no culture!” the colonizer shouts upon seeing the natives. But they do. They are engineers. They are mathematicians and quants. They are venture capitalists. They are concerned with community, with sharing ideas and with the odd proof-of-concept slice of machine expressionism. Perhaps they don’t have the time or the vanity for the art market. In “What If There Is No Next Big Thing?” Doug Coupland presents the radical possibility that tech *itself* is the next vanguard of art, that the two strains of high art and high technology have finally become indistinguishable. In “Jodi’s Infrastructure,” Alexander Galloway takes up the work of Jodi.org to

illustrate the vanishing difference between working in the digital, and working on it. Zach Blas offers a "dildotectonics of the internet" in order to parse out the difference between the network's sudden death at the hands of nationalist dictators, and its slow evaporation into the background of the lifeworld.

What becomes of the artist in this new arrangement? Andrew Norman Wilson, in "The Artist Leaving the Googleplex," narrates his journey from corporate video artisan to rising star in "the cottage industry of critical art." Finally, in "No Man's Space: On Russian Cosmism" Marina Simakova examines artwork orbiting around an earlier faith in technology's ability to redeem the infrastructure of beauty amidst the unfolding revolution.

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Douglas Coupland

What if There's No Next Big Thing?

What if, in the tech world, there is no next big thing? First we had fire, then came the wheel, and the PC, then the internet and then Google and then the iPhone and then … that's it. There's nothing more left to come. We're *waiiiiiiting*—but no, we've received all there's going to be and tech's broad strokes have all happened. Does this sound scary, or kind of sad? We can laugh at such a proposition because we know it's not going to happen. We might dream of a year when people would just stop inventing new things, but in reality there's going to be more and more new stuff. All of us will continue our lives permanently vibrating on the tech revolution's vertical asymptote—screaming like Mia Farrow in *Rosemary's Baby*, mid-coitus with the devil: "Oh my God, this is really happening!"

Let's look at the art world and ask the same question: What if there's no next big thing? There was the *Venus of Willendorf* and Picasso and Duchamp and then Warhol and then came a hundred thousand highly defended micro-niches so microscopic that they make sense only when looked at in aggregate, like a mole of carbon dioxide molecules or a computer model of butterfly migrations in and out of Mexico: "The Emergent Behavior of Early Twenty-First Century Contemporary Art." What if the micro-niching of art is art's last broad stroke? What if art is over? Okay, this sounds like Francis Fukuyama's pronouncement on liberal democracy, and it's probably not true— *probably*—but it seems a lot more probable than the big strokes of technology coming to an end.

Many people have noticed the sense of increasing sterility in contemporary art. It's natural to wonder, "Hey, maybe there's some larger picture we're missing here. Maybe there's a next big art thing out there that's so big as to be invisible." Here's another thought: What if tech itself is the next big thing in the art world? What if tech itself is the Duchamp urinal in the twenty-first century Armory Show? Is the notion that technology = art depressing? Are you a hater to think such things? Which is better art: a performative piece whose movements are informed by real-time Los Angeles traffic patterns, or *plein air* watercolors of delicate song birds done on a foggy morning? Does it drive you crazy when autocorrect always flags the word "performative"?

Today, when dealers speak with a potential client about a new artist, the client almost always asks, "Is this new artist young? How young are they? And how new is the technology they're using … has it been released or is it in beta? Is anyone else using this new technology?" The impulse behind this reflexive questioning can be one of two things: a puritanical interest in new forms and ideas—or opportunism wearing a cloak of art-world puritanism. Does this young artist have any technologies that he or she needs to unlearn? No? Great. Do they know much about the art world? No? Even greater. Do they produce actual physical things at the end of whatever it is they do? Yes? Wonderful. And finally, does this artist use

This image is a rendering of the 3-D printable scan file of Venus of Willendorf, the statue itself dating back to c. 28,000 B.C.E – 25,000 B.C.

something that can be related to VR or augmented reality? Yes? Okay then—Frieze, we have a perfect storm . Fifty years after McLuhan's *Understanding Media,* the medium that drives the message is still the message—and sometimes it seems like the only hope for any message at all.

Implicit in this not uncommon dealer-client exchange is an unspoken assumption that new technologies allow new and hitherto unforeseen dimensions of the human condition to be made manifest. I wonder: If human beings stopped creating new technologies as of today, would the art world crater overnight? Artists would be limited to further documentation from within a fixed realm without technological novelty. With seven billion people on Earth, chances are we'd soon catalogue almost all experience available with the tools at hand. We'd enter a world of perpetual repetition with nothing new.

So who's making all of this new technology that's always messing with our lives? Who are these Silicon Valley inventors? And are they inventing things just to torment the world with relentless novelty? No. That would require a spoken and codified agenda which simply doesn't exist. Are these inventors doing it to get rich? Sometimes ... but as a rule, the people who make the best new stuff are usually the people with no foreground interest in money; they just want to make cool stuff—or they just want to meet their production milestones. I've noticed that almost nothing annoys an engineer or mathematician more than asking if they ever think about potential superpowers unleashed by the things they're working on—whether unintended or otherwise. Only once have I received a full and honest answer to this question. A coder in an optical fiber research facility in New Jersey told me, "It can sometimes be really depressing to come to work every day knowing that all of what we do is largely to create an ever more satisfying porn experience in the $29.95-per-month price range."

A Marvin the Martian Looney Tunes embodies this USB Flash drive, part of Warner Bros. merchandizing.

The Star Trek holodeck is emulated in these beaded translucent sculptures by Devorah Sperber, part of the Microsoft Art Collection.

If one were to investigate the degree of interest engineers and mathematicians have in the art world *qua* art world, one would only find piles of Legos, Rubik's Cubes, and Star Wars tchotchkes on office desks—three items representing binarization, proof of successful problem solving, and a timeless emotional myth with which to bond. A $50,000 productivity bonus given to a Valley engineer would, in all likelihood, be used to buy original animation cells from vintage Marvin the Martian cartoons. I once visited the Palo Alto apartment of a friend who's an expert in 3-D fly-through experiences; in his apartment was a table, a few flat-screen monitors, several drives, and a folding chair—nothing else. I asked him when the rest of his stuff was arriving and he said, "I've been living here for six years."

Is there the occasional engineer sensitized to historically and economically consolidated art? Sure. Nathan Myhrvold, Microsoft's former CTO, had a huge, seminal Roy Lichtenstein canvas in his suburban Seattle house—but then he also has a life-size T. rex skeleton in his living room.[1] Pace has a gallery in Palo Alto. Microsoft has an astonishing art collection that rivals any mature museum, and it's also out there in the world working hard, but mostly in Microsoft facilities.[2] And, oh yes, the SFMOMA has a massive new addition. You can't call the tech world or the Silicon Valley an art wasteland. There's a lot of work and collecting there, but it all inhabits the world in a different way. Last month I had a look at a new system that 3-D scans flat-but-textured surfaces such as paintings. The technicians who created it were trying to figure out ways to use it. Their solution was to license and scan Van Gogh paintings, 3-D print them, and then sell them for $40,000 each at a local shopping mall catering to Chinese clientele.[3] The whole exercise was depressing yet enlightening. For most technicians, art = arty art with lots of brushstrokes that comes from a big old-fashioned museum. The Valley's art tendencies default to a naive tiny chunk of Venn real estate where art and science overlap—or where they *don't* overlap. The art world gets mad at the Valley for not throwing it more money, but tech is just an industry, albeit one that does very well and that happens to be geographically hyperconcentrated. I don't see people getting angry at Big Pharma or Big Corn for not lavishly spending on art and donating to museums. If they were geographically concentrated, would we be having this same discussion? Probably not.

Is there any contempt toward the art world from Silicon Valley's direction? Not really. Technicians have spent their lives becoming technicians, so it's what they care about, and you could say the same about workers in many other industries. Except tech is different because technicians can make insane amounts of money and they have borderline alchemical powers to shape reality in a way that bends it to their will, whether or not the bending is cognitive, programmatic, unintentional, or subconscious. The fact that many of them become wealthy is just a bonus factor that makes the outside world curious about them: nerds—they buy crazy, nutty stuff like T. rex skeletons! It's also a given in tech culture that human beings don't change; only technology changes. Technology allows us to do things we never thought we were capable of doing: Apollo 11, artificial sweeteners, death camps. If the twentieth century taught us one thing, it's that when technology changes too quickly, people tend to make really bad decisions. People who feel engulfed in chaos can be tricked into doing almost anything. So investigating the people who make the technology that

triggers change isn't necessarily an arbitrary call.

The money people—the venture capitalists—are different from techies. They're just generic money people—albeit many have a knack for tech IPOs and have been doing it for so long that they're as much a part of Valley ecology as frozen freeways and that Segway collecting dust in the back of the garage. But you can't really view them differently than Wall Street money people. So, in being generic, financiers are only ancillary to decisions about the Valley's computative agenda—which just leaves the techies to define the vision. What happens if you take the Valley's relentless desktop triumvirate of Legos, Rubik's Cubes, and Star Wars tchotchkes to their logical end state of binarization, problem solving, and reductive myths that occur out of time—are we approaching a world that's being turned into a programmer's desk? Actually, yes, and the more clearly you envision a world just like that, the closer you are to seeing the world that is actually going to happen.

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Douglas Coupland is an author and artist based out of Vancouver and Paris. In 2000 Coupland amplified his visual art production and has recently had two separate museum retrospectives, *Everything is Anything is Anywhere is Everywhere* at the Vancouver Art Gallery, The Royal Ontario Museum and the Museum of Contemporary Canadian Art, and *Bit Rot* at the Witte de With Center for Contemporary Art in Rotterdam, and Villa Stücke in Munich this fall. In 2015 and 2016 Coupland was artist in residence in the Paris Google Cultural Institute.

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Ingrid Burrington

Light Industry: Toxic Waste and Pastoral Capitalism

There are two plaques at 844 E. Charleston Road in Palo Alto—one from the Institute of Electrical and Electronics Engineers (IEEE) and one from the state of California—commemorating it as the place where Fairchild Semiconductor revolutionized computer manufacturing in 1959. While the IEEE plaque emphasizes the ingenious planar process developed by Fairchild's Jean Hoerni and Robert Noyce, the state of California's plaque documents this site as the birthplace of the first "commercially practicable" integrated circuit (presumably in comparison to earlier, commercially disappointing circuits).

Aside from some markers for groundwater monitoring wells on the pavement, there isn't any signage for the restrictive covenant issued for 844 E. Charleston by the California Regional Water Quality Control Board (RWQCB) in January of last year.[1] It prohibits the operation of day-care centers, elder-care centers, hospitals, and K–12 schools on the site due to ongoing remediation of contaminated groundwater and soil on the property. The volatile organic compounds discovered in the groundwater may not have been a result of Fairchild, who vacated the property in 1967, expanding to a larger manufacturing facility that, today, is mostly Google offices and a Superfund site. It could have been the work of the following tenant, Advalloy, a company focused on precision metal-stamping for semiconductor production, until going bankrupt in 1991.[2] Both ended up being held liable for the contamination in 1989.

844 E. Charleston Road, Palo Alto, CA. Photo courtesy of the author.

That a landmark of technical innovation sits atop toxic waste isn't rare in Silicon Valley. There are twenty-three federal Superfund sites in Santa Clara County, which encompasses most of Silicon Valley, and these sites are connected to semiconductor and electronics manufacturing.[3] There are dozens more groundwater and soil remediation sites monitored by the RWQCB, many of which—like 844 E. Charleston—are tech industry legacies. This history of the landscape usually meets with a flicker of recognition when explained—a reminder that the region

101 Bernal Road, South San Jose is the former site of a Fairchild Semiconductor facility that, in 1981, spilled toxic solvents into drinking water wells serving the Los Paseos neighborhood. Photo courtesy of the author.

earned the nickname "Silicon Valley" because of its role in manufacturing electronic hardware, before it became famous for the manipulation of electronics via software.[4]

This dislocated sense of history suits a place that is often perceived less as historical landscape and more as a synecdoche for an entire way of life. Whether it's being spoken of with overwhelming contempt or feverish faith, critics and champions alike tend to talk about Silicon Valley as a condition rather than a concrete geography. It isn't a place that *exists* so much as something that *happens* to people and industries and other cities.

Consider the dozens of attempts to graft "Silicon" onto neighborhoods and regions throughout the world: there are Silicon Roundabouts, Alleys, Slopes, Shipyards, Forests, and Fjords. My personal favorite is the redundant "Silicon Desert" of the Phoenix metropolitan area, which is somehow not a reference to the extraction of raw silica from sand. Unlike the original, these new Silicons don't refer to manufacturing legacies but are instead gestures of sympathetic magic, summoning images of forward-thinking, high-minded innovation, well-appointed open-plan offices, and the ostensibly good jobs they contain.[5]

For critics, the wholesale export of Silicon Valley culture also means exporting a blithe libertarian ruthlessness cloaked in idealism and technocratic certainty. Headlines diagnose the Valley in various ways—"Silicon Valley Has An Arrogance Problem," "Welcome to the New Feudalism," "Is Silicon Valley Saving the World or Just Making Money?"[6] A central characteristic of many of these criticisms is *insidiousness*—an expectation that beneath a shiny surface inlaid with the best intentions lies an ugly truth.

This rhetorical Silicon Valley didn't emerge from a vacuum—or, it emerged from a very particularly designed and contained vacuum, which itself emerged from specific conditions and actors in postwar Northern California. Signifying global industries with geographical shorthand isn't new: Wall Street means finance as surely as Hollywood means cinema—but history is the price of such abbreviations. Studying Wall Street's well-established origins in the slave trade can offer a clearer understanding

of the dehumanizing and frequently racist origins of financial accumulation. And a closer examination of the historical landscape of Silicon Valley relocates its corresponding ideology within the larger histories of industrial manufacturing, labor struggles, and environmental damage. No landscape cultivates insidiousness better than suburbs laden with toxic waste.

Groundwater monitoring well, Cupertino.

While some industrial manufacturing sites have been demolished and replaced by yet more strip malls and offices, many were designed to deny their industrial past. Stanford Industrial Park is now Stanford Research Park, a parcel of land set aside by Stanford University in 1951 for technology companies in then-still-largely-agricultural Palo Alto. Stanford Industrial Park followed a postwar architectural trend described by Louise Mozingo as "pastoral capitalism," in which the development of new managerial hierarchies (i.e., middle management) and growing suburbanization encouraged the development of the bucolic corporate campus, which effectively harnessed American ideals about the pastoral landscape to "[subsume] the capitalist enterprise into the pastoral suburb's implied moral order."[7] Over the course of its development, Stanford codified increasingly specific regulations for landscaping and architecture in the park, as documented by John A. Findlay in *Magic Lands: Western Cityscapes and American Culture After 1940*:

> Regulations called for relatively low buildings (usually a thirty-five-foot maximum) that were appropriate to the topography; parklike expanses of lawn, seeded with "random" rather than "stylized" plantings of trees; rows of foliage to screen all pavement, blank walls, mechanical and electrical equipment, trash containers, storage areas, and loading docks; underground utility lines; "complete concealment" of storage tanks, air-conditioning equipment, ductwork, generators, and transformers, and minimal use of signs ("the fewer the smaller the better").[8]

Similar regulations were adopted by other cities in Santa Clara County. This atmosphere was meant to attract what one 1951 land use report called "light industry of a non-nuisance type"[9]—a form of industry that David Packard described as attracting a "better class of workers." Instead of smokestacks and smog, there would be clean rooms and campuses. Prior to World War II, Santa Clara County was first shaped by the Gold Rush, incarnated locally in the New Almaden quicksilver mine in San Jose. It was then shaped by agriculture: for much of the early twentieth century, the region was the top producer of dried, canned, and fresh fruit. These industries employed a largely nonwhite, immigrant labor force working under deplorable conditions for meager wages, whose organizing efforts were frequently suppressed. Presumably this was the point of comparison for Packard when he spoke of that "better class of workers."

Innovation Drive, outside Moffett Field. Photo courtesy of the author.

Non-nuisance, light industry flourished in the following decades thanks to a confluence of support from institutions like Stanford and the Department of Defense, flush with the rise in research and development spending after Sputnik in 1957. Electronics, first developed for defense, soon expanded to civilian applications, and the electronics industry rapidly became a top employer in the region. According to a 1979 report from the Project on Health and Safety in Electronics (PHASE), 26.3 percent of Santa Clara County's jobs in 1977 were in the electronics industry—of which 84 percent of were in manufacturing, meaning that electronics manufacturing alone accounted for 22 percent of the county's employment.[10]

Although early Silicon Valley was an industrial manufacturing powerhouse, its public image retained the idealism exemplified by the Stanford Industrial Park. Sometimes industrial pragmatism and pastoral aesthetics harmonized. Silicon chip manufacturing at scale requires a lot of chemicals—from the acids used to etch chips to solvents used to clean them. Burying these chemicals in underground storage tanks was officially a matter of fire safety, but it also made the industry look far less industrial, safer, a non-nuisance.

The underground storage tanks leaked into groundwater aquifers, some of which provided drinking water to households in Santa Clara County. In 1981, trichloroethane (TCA) was discovered in the water supply of the Los Paseos neighborhood of South San Jose, serving some 16,500 households. It was estimated that 14,000 gallons of TCA and 44,000 gallons of other solvents and toxic chemicals had leaked from storage tanks at a Fairchild Semiconductor facility at 101 Bernal Road.[11] After the leak was disclosed, Los Paseos residents documented thirty-four miscarriages and thirty-one cases of children born with birth defects.

Fairchild Semiconductor at 844 E. Charleston Road, 1959.

Studies conducted in response to the community's demand for answers and accountability offered little of either. While one study observed a rate of spontaneous abortion in Los Paseos at more than twice that of a control group,[12] other studies conducted around the Los Paseos incident could not conclusively prove a connection between the Fairchild spill and the neighborhood's health problems. This was due to absent information: a lack of conclusive studies on the potential harms of TCA, a lack of ambient air data to rule out the possibility of air pollution as a contributing factor, a lack of information about the exact duration of the leak. Although the leak was discovered and documented in 1981, the California Department of Health Services report on it noted that Fairchild's attorneys claimed it was unable to provide 1979 and 1980 meter readings for the solvent tank in question because records were "lost in an acid spill accident"—the semiconductor industry equivalent, perhaps, of speakers losing their grip on the back of a truck.[13]

Groundwater treatment pump system at Siemens-Intersil site, Cupertino.

In general, most of the aquifers affected by these chemical leaks weren't part of a drinking water supply. (To explain why Santa Clara County gets most of its drinking water from the Hetch Hetchy reservoir requires a separate essay—no, probably a dissertation—on water politics in California, which not for nothing formed the basis for Polanski's *Chinatown*.) Today, these cleanup sites pose a public health harm primarily as "vapor plumes"—the chemicals underground rise to the surface and are released into the atmosphere as vapor, sometimes getting into the ventilation systems of buildings and households. In 2013, workers at Google offices at the Middlefield-Ellis-Whisman Superfund site were exposed to excessive amounts of trichloroethylene (TCE) via vapor plumes.[14]

Before these harms were known to the public, they were well-established hazards of working in electronics manufacturing. For decades, assembly workers in Silicon Valley (of which 76.4 percent were women and 38 percent non-white, according to PHASE's 1977 numbers) weren't told what they were being exposed to on the job. Much of what's known about these conditions is thanks to the work of groups like the Santa Clara Center for Occupational Safety and Health (SCCOSH). Through efforts like establishing the PHASE hotline and publishing dozens of guides to chemicals and their health hazards in multiple languages, SCCOSH's approach focused on empowering and supporting workers, many of whom faced retaliation for challenging unsafe workplaces. Although these conditions persist throughout the industry, they are less and less familiar to US audiences, since manufacturing labor has left Sunnyvale, along with its promises and

Construction on Apple Campus II, Cupertino. Photo courtesy of the author.

liabilities, for places like China and South Korea.

The US Occupational Health and Safety (OSHA) Act wasn't enacted until 1971, and implementation of workplace regulations across states moved slower than the pace of technical innovation. A 1980 San Jose *Mercury News* report on health hazards in the industry featured a quote from a California OSHA official who noted that "over 200,000 chemicals are used in the United States. We have standards for about 2,000."[15] This, combined with the highly secretive and competitive nature of the semiconductor industry, was a popular argument for industry self-regulation. A similar devotion to business secrets and the use of innovation as instrument of plausible deniability continues in today's tech industry, where culpability has moved up the stack from hardware to platforms. Instead of chemicals, this tier of industry closely guards hundreds of thousands of lines of code, and no engineer, product manager, or executive can be held accountable when that code produces, for example, disparate and racist outcomes for users.[16]

At the toxic cleanup sites I visited in search of the material history of Silicon Valley, evidence of environmental cleanup is often located behind slatted chain-link fences. Many groundwater remediation projects use what's known as a "pump and treat" system. Contaminated water is pumped into filtration tanks that collect volatile organic compounds before returning the filtered water to the soil. One cluster of these tanks sits in a parking lot on Tantau Road, directly across from Apple's still-under-construction Campus II, whose renderings promise a gleaming glass donut lifting out of a forest. When completed, the 2.8-million-square-foot building will span 176 acres. Its renderings don't account for the houses along Homestead Road or the Cupertino Village strip mall and Hilton Garden Inn across the street. Walking the future perimeter of this new citadel, I imagined a business trip where an executive would never leave a one-mile radius of the new campus. For this blinkered visitor, the slatted fences and weird 1970s architecture of the region would remain hidden and peripheral, mere hints of the possibility that whatever constitutes "Silicon Valley" has longer and deeper historical foundations than some perpetual future perfect at 1 Infinite Loop (the address of Apple's current main campus).

The easily ignored, older landscapes evoke an irrational

affection in me, their brutalist gestures made clumsy by their modest scale, drab color schemes, and apparently limited upkeep. It's evidence of a humbler, more eccentric tech industry that stands in contrast to the steel-and-glass behemoths built by Facebook and Apple. The new tech campuses are places I find embarrassing and sad—an adolescent, unfinished understanding of grandeur or luxury installed forever in the landscape. This architecture assumes that character is a collection of well-placed Bézier curves, reclaimed wood, and whatever's more expensive than Design Within Reach.

But even the older Silicon Valley architecture is an imposition drawn from misleading historical narratives of computer history in which earnest, bearded men executed cool ideas for their own sake, quietly aware of their corporate and military-industrial funding but resolutely higher-minded in their ambitions. We could call this Valley history, as exemplified by Mountain View's Computer History Museum, whose central permanent exhibition, "Revolution: The First 2000 Years of Computing," proudly showcases prototypes of seminal analog machines and a replica Xerox PARC beanbag chair, but has almost nothing about assembly, supply chains, or mass manufacture, and less than nothing about groundwater contamination. Valley history lionizes the iPhone's designers but leaves out Apple's experts in supply-chain management and logistics, and positively erases the millions of workers toiling—and striking—throughout Asia. Valley history is written into the region's industrial landscapes, designed deliberately to erase an industrial workforce, where the hard part happens somewhere else and the burdens and hazards are borne by someone else at their own risk.

If the architecture of Silicon Valley obscures its toxic legacy by concealing information, public records obscure it by providing too much. Both the EPA and the RWQCB furnish voluminous online records on cleanup sites, mostly within PDF reports written by and for regulators and environmental engineers. These records do not answer the question of whether these sites are harmful so much as they testify to how difficult it is to consistently measure harm (in geology and water systems, very). Although they depict subsurface damage, the maps in the reports are generally two-dimensional, visualizing groundwater plumes as broad polygons of potentially unsafe vapors hovering over a given area like the angry ghost of an entire class. Remediation is a long-term, intensive maintenance project, one that does not correspond easily to the timelines of app development and social media news cycles. It's no wonder Silicon Valley's toxic legacy is not better understood by a public accustomed to an industry and a landscape that champions frictionlessness.

While trying to parse a morass of environmental cleanup reports, winding suburban itineraries, and dozens of photographs of mostly uninteresting real estate, I keep returning to the Stanford Industrial Park and that phrase

101 Bernal Road, South San Jose is the former site of a Fairchild Semiconductor facility that in 1981 spilled toxic solvents into drinking water wells serving the Los Paseos neighborhood. Photo courtesy of the author.

about its non-nuisance light industry. Following "light industry" away from its literal application in manufacturing and down the more romantic path its cadence suggests, one could argue that all kinds of industries have since been subsumed by light industry—insofar as so many kinds of labor now consist in facilitating the transmission of light across great distances.[17] As the effects of light industry (both beneficial and harmful) become increasingly diffused, so too do things like history and accountability. And it's this atmosphere of diffusion that draws me to the landscapes and lives that are rarely canonized in the history of technology but remain integral to it.

Raquel Sancho, the director of SCCOSH's Working Women's Leadership Project (We-LeaP), pointed out in a 2004 interview that

> [without] workers, all production tools and materials are just so much machines, metal and plastic. All the exotic chemicals like arsenide for creating computer chips and electronic parts are simply so much liquid, absolutely without value until the worker uses his or her labor to turn someone's product design into reality.[18]

Silicon Valley is finally this contradiction: its technological monoliths strain upwards toward the future, while a toxic political history persists just below ground.

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Ingrid Burrington writes, makes maps, and tells jokes about places, politics, and the weird feelings people have about both. A revised edition of *Networks of New York*, her field guide to urban network infrastructure, will be published by Melville House in August 2016. She lives on a small island off the coast of America.

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18
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Andrew Norman Wilson

The Artist Leaving the Googleplex

For $11 an hour I stocked nonfiction and worked the register at Black Oak Books in Berkeley, a used bookstore otherwise staffed by aging, garrulous intellectuals without institutional affiliation. For $12 an hour I assisted Sam Green, a filmmaker whose first documentary, *The Weather Underground*, chronicled the radical group from the 1960s responsible for bombing the US Capitol, the Pentagon, and the United States Department of State. The Weathermen always phoned their targets beforehand, after the bomb had been planted, to avoid hurting anybody. I worked these jobs in 2007, before the economic meltdown and the sudden growth of the second tech bubble. It was a pre-Airbnb, pre-Uber, pre-I-can't-get-a-reservation-anywhere-in-the-Mission-District-on-a-Monday-night San Francisco.

My partner and I moved from a divorcee's guest room in Berkeley to fulfill a low-income requirement in an unfinished luxury loft of smoothly poured concrete near downtown. We lived there for four months until the unit sold for $1.2 million. We ended up at Artists Television Access, in a room occupied by Divine before the media arts organization with anarchist leanings moved into the building. I socialized with Marxist organizers from the labor union UNITE HERE!, Marxist graduate students from UC Berkeley's rhetoric program, and Marxist workers from different affinity groups. Walking home from a book-group meeting with members of the Workers International League, I felt a surge of affect, like I was starting to accomplish what I had moved out to San Francisco to do—which was to be political.

After four months my knowledge began to feel unmarketable. I found myself wondering if I would ever be able to afford the objects that adorned my middle-class childhood memories. A job posting on the Bay Area Video Coalition website for a video producer led to an interview with an anonymous company in Mountain View. I was picked up by a middle manager named Bert in a Prius at the Caltrain station. As we drove past the Computer History Museum and into a large corporate campus, it occurred to me that I was competing for a position at Google, and had been, technically, since I'd stepped into the vehicle. Upon exiting, I confronted a chaos of identical, sky-blue cruiser bikes just organized enough to seem suspicious, like a set-piece for first-time visitors.

We entered 1600 Amphitheater Drive through one of many sets of large glass doors, and I halted in front of a row of six digital prints of the Google logo, all on the same 3 × 5 foot canvas, each one done in the style of a different modern master—Monet, Van Gogh, Matisse, Picasso, Dali, and Pollock. The Pollock was a basic Photoshop splatter-brush defacement, while the Monet was an epic travesty: an impressionistic GOOGLE floating nowhere above three lily pads. The Dali was a shotgun marriage between the *Persistence of Memory* and the famous insignia. The collapsed sense of space and time resonated most with its surroundings. "Yeah, they like to

do art projects here," said Bert impatiently.

After four interviews and a Final Cut Pro test session in which I edited reel of a company seminar with David "Avocado" Wolfe, the self-described rock star of the superfood and longevity universe, I was hired for a month-long trial period. If I survived I would remain a contracted employee, paid a salary of $34,000 by Mountain View–based Transvideo Studios to work full-time on the Google campus. I would enjoy perks like the endless swimming machine or a private Thai Massage in one of the only rooms in the Googleplex blessed with opaque walls. Too skeptical to make many friends and integrate, I frequently took my electric scooter around campus to systematically sample the offerings at each of the nineteen cafes, and to purify my anus with the arsenal of targeted functions on the Japanese toilets that graced each and every bathroom. I never missed an opportunity to reserve a conference bike for my team.

Shortly after I was hired, white and gray lounge chairs with spherical retractable hoods started to appear in open spaces without any corresponding memo or orientation. These were MetroNaps—sleep machines. On my third spotting I decided to get in, discovering remote controls on the arm that could adjust knee elevation, toggle between "sleep music" tracks, and set an alarm consisting of light and subtle chair vibrations. Unlike the Japanese toilets, MetroNaps weren't branded with a national culture, authentic or otherwise; instead, they were always already international, produced for the jet-setting elite of the global information technology sector to "improve employee morale while boosting the bottom line."

A former coworker rests in a metronap sleeping pod. Photo courtesy of the author.

The first time I saw Sergey Brin he was gripping a ball not made for sport, but more likely for a child, or a dolphin, or at the very least an office, while talking to two other men in a clearing of personalized work stations. He was too short to have been a quarterback, in high school or anywhere else, but his chest was puffed out from beneath a long-sleeved performance base layer. He sporadically shifted his weight back and forth in royal blue Crocs, moving the toy between his hands, gesturing as he explained something to his less poised colleagues.

The first time I saw Larry Page he was eating alone with his head down in one of the campus' peripheral cafes. I remember a moist yellow pile on his plate, which could have emerged from any number of cuisines—pan-Asian, Caribbean, Magyar—depending on the mash-up offered at that particular cafe. His blazer suggested he had just given a presentation to outsiders and he looked sort of sick.

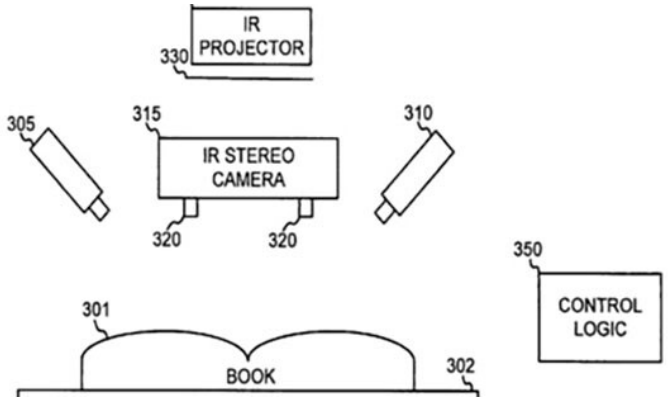
One day Barack Obama came to campus and I spoke to him for three minutes. He coincides with an archetype of cool in a political system starved for hipness. I decided that this was the secret to his success. He lets you participate in the cool while subtly convincing you of your own bright future. "I love free pancakes," I said, too quickly. "Me too, man," he replied, patting me on the shoulder, "me too." I didn't get to talk to Al Gore when he visited for Google's annual "Zeitgeist" conference, but I felt the wind as he stormed past me down a long hallway and into a bathroom like an animal anxious to shed its skin. I stood there holding my two signed copies of Bill Clinton's book *Giving*, one of which I sold to Black Oak Books for $150. I'm still sitting on the other.

One day, after scrubbing the audio on the video of Anthony Bourdain giving a talk as an Author at Google and then exporting a Google Dance event performance by the employee troupe Decadance, I heard a woman screaming from the lobby. It was the type of screaming you might hear at a crowded Verizon store when somebody has just learned the cost of cancelling their contract. This wasn't a common sound in the corporate offices of a company started by two Montessori/Stanford graduates, where employees take mindfulness-based emotional intelligence courses . A few of us crept towards the lobby to see a woman in a San Jose Sharks jersey confronting our building's receptionist while clutching a printout of what appeared when she entered her name into Google. She had marched down to the headquarters to demand that the first two search results be removed. She was savvy enough to know the internet was produced and organized somewhere, but like most of us she didn't fully understand how it worked.

The novelty of the environment evaporated, like a new operating system that doesn't feel new for long. I would line-up off Market Street in San Francisco at 7:15 each morning, in order of arrival, with a group of coworkers—mostly men—wearing T-shirts emblazoned with logos for companies like DoubleClick and

SurveyMonkey. We tried to keep an open mind regarding the queries, come-ons, and antagonisms of the also-mostly-male homeless community our lines snaked around. The luxury limo shuttle would arrive and take me to the office. There I would sit in front of two Apple Cinema Displays—sometimes editing and making graphics, sometimes mining information to leak to organizer friends. I read Antonio Negri and the luminaries of Italian Autonomist Marxism and anthropological studies of finance like Benjamin Lee and Edward LiPuma's *Financial Derivatives and the Globalization of Risk*. Render time meant research time, and unlimited printing meant flyers for the events my friends and I would put on at Artists Television Access back in San Francisco. I began to suffer debilitating headaches around 3:00 p.m. and started doing stretches in my building's empty gym during my afternoon break. After 9–12 hours on campus I would fill my Google-issued bag with Naked juices and to-go containers of food for my roommates, before getting back on the shuttle to ride Route 101 back to San Francisco. The nausea would set in when the shuttle pulled onto the freeway.

Something happened every day at 2:15 p.m. outside of the building next to mine. At first it registered as an unusual shape with unusual colors and an unidentifiable cause passing me consistently at the same time everyday. I came to realize that it was the same group of workers, mostly black and Latino, on a campus of mostly white and Asian employees, walking out of the exit like a factory bell had just gone off. Sequestered at the outer limits of campus, they would all get into their own cars: not Google shuttles like the rest of us. Hanging from their belts were yellow badges, a color I had not noticed before amongst the white badges of full-timers, the red badges of contractors, and the green badges of the interns.



Patent 7508978: Google's proprietary book scanning technology.

I started to obsess a little. I mined all the information about the yellow badges that I could from Google's intranet, which led me to the internal name for the team—ScanOps. This class of workers, who left the building much like the industrial proletariat of a bygone era, actually performed the Fordist labor of digitization for Google Books—"scanning" printed matter from the area's university libraries page by page on V-shaped tables with two DSLR cameras mounted overhead. I found some vague meeting notes, probably left visible by accident, about how they would be excluded from all standard privileges like cafes, bikes, shuttles, and even access to other buildings. This was a fairly commonplace result of hierarchical organization at a corporate multinational, but why was this class of workers denied the privileges that even the kitchen and custodial staff had access to, and why did it seem so secretive?

I researched the Lumière Brothers, who presented their workforce in motion as it left a single gate of their factory that produced photographic plates. It was one of the first films ever made. Almost immediately , I wanted to create a similar document, but updated for the intervening century in digital, high-definition color video with sound. And I wanted to contrast the movement of the Google book "factory" workers with other classes of employees to demonstrate how corporate hierarchy scripts different forms of movement. I also wanted to get to know the ScanOps workers, and see how they felt about all this.

One day during lunch I set up a camera and tripod in a few places around the center of campus and recorded white, red, and green badged employees coming and going. The next day I set up in front of the ScanOps building right before the workers' shift ended, and recorded their exit. The day after, I sat near the Google sign outside the building and introduced myself to a few of them, offering my card and saying that I worked next door and would love to hear more about their work. The following day—almost a year into working at Google—I was fired. Management would say it was for using company video equipment on company time for a personal project. Google's legal team would say it was for snooping around the legally contentious Google Books project. But I knew the truth. Because, for all the perks, for all the fountains gushing in the sunshine and the embroidered fleece jackets, the on-site medical staff, the flexibility and the ball pit; for all the "don't be evil" and the free email and the building of accessible infrastructure for the international democracy to come; for all of this, Google remains committed, first last and always, to accumulation. And that means it wasn't going to let a little thing like structural racism slow its roll. The yellow badge signified "not worth the price of integration," considering the high turnover rate, the accounts of physical attacks between employees, the criminal records, the widespread lack of credentialed education. It meant getting paid $10 an hour, going to the bathroom only when a bell indicated it was permissible to do so, and being subject to a behavioral point system that could lead to immediate termination, for which the only fix was at special events like the Easter egg hunt, where a small number of eggs contained point removal tickets. Any attempt to draw attention to the fact that this supposedly

revolutionary company contained a decidedly unrevolutionary caste system would be dealt with in the old-fashioned way.

The termination of my employment came at an opportune moment. San Francisco was the first truly cosmopolitan place I'd ever lived. After growing up in a cul-de-sac carved into a forest in Massachusetts, I was noticing that the freedoms afforded to artists like my roommates at Artists Television Access were more appealing than the logistic approaches of documentary, activism, and corporate branding and communications. I was picking up ways of framing my documentary and activist work as "social practice" and "relational aesthetics." In 2009 I ended up at the School of the Art Institute of Chicago in the sculpture department. I read the postcolonial theory of Gayatri Chakravorty Spivak and the constructivist anthropology of Bruno Latour and wrote artist statements where I diagnosed my art like a fascinating new disease, complex and evolving:

> My current practice investigates the inner workings of corporate globalization via a direct involvement with the actors, technologies, and organizations that constitute it. In creating this interdisciplinary work, I push the limits of business relationships to extremes that create ruptures and require them to be rethought.

I was quite affected by an idea from *The Practice of Everyday Life* by Michel de Certeau—" *la perruque*," which translates to "wig." It's a tactic for enacting resistance in a way that looks like you are just working hard, and what he describes operates more like a computer virus infecting a vast computer program than a revolution.

Independent from coursework, I was reading the blog of San Francisco–based author, entrepreneur, angel investor, public speaker, Chinese kickboxer, tango champion, and lifestyle designer Timothy Ferriss—a shell-company in the flesh. His book *The 4-Hour Workweek* promoted the outsourcing of tedious tasks to remote personal assistant services in India. I wanted to develop a direct relationship with a member of a corporate middle class subjected to digital sweatshop labor, so I signed up with the service Get Friday in Bangalore. I was paired with a twenty-five-year-old assistant named Akhil. Instead of the Robinson Crusoe, master-slave narrative the company was arranged to reproduce, I paid Akhil to assign me tasks of his devising that, thankfully for the art's sake, proved to be playful, biographically loaded, and unnecessary. We started by taking our pulse rates and simultaneously charting them in Microsoft Excel. Then Akhil asked me to make a video for him about the best fighter jet in the world. He was a frequent visitor to airshows with his father. I responded with a thirty-three-minute video essay. A promising engineer at an early age, he snail-mailed me pencil drawings of toy boats he had designed and asked me to construct one out of hobby parts and then mail it back to his office. I applied for a Fulbright scholarship to India that would allow me to meet Akhil and produce an exhibition in Get Friday's offices. My application described the outsourcing relationship as a fluid material that I sought to change the flow of. The Fulbright committee in India rejected it on the grounds of it not being art. Eventually the CEO of Get Friday started to use my project as marketing material to illuminate the company's progressive corporate values.

Near the end of my studies, I attended a Scholarship Intensive at the Banff Center, a Canadian institution dedicated to the arts, leadership development, and mountain culture. There, I was convinced by a Canadian lawyer to release my Googleplex video, which I had been sitting on for two years because of the nondisclosure and employment termination agreements I had signed. He claimed that because Google Books was already such a legally contentious project when it came to copyright law, and because he imagined many viewers would respond with commiseration, Google wouldn't pursue legal action against an individual with nothing to lose. I took his advice. My eleven-minute drab-core video essay was played over eighty thousand times on the day Gizmodo and Gawker picked it up.[1] Google never responded. Its only public statement was a now-deleted tweet by Marissa Meyer, vice president of Product Search at the time: "Interesting perspective," she wrote, and linked to the video.

Suddenly I had entered the cottage industry of critical art. I had teaching jobs, invitations to speak publicly, and residencies lined up. I won a $20,000 Dedalus Foundation grant and lived off it for a year after school. I moved to New York and presented at conferences alongside artist-activists like Hito Steyerl and showed in exhibitions with Harun Farocki. I met the curator Aily Nash and our conversation about the Googleplex video turned into a curatorial project— *Dream Factory/Image Employment* —that showed at museums around the world. Aside from a few freelance gigs and some Airbnb hosting, I was able to spend most of my time with my work. People like Akhil in Bangalore and the workers at Google felt further away. I was surrounded by people who agreed with me, or veiled their minor disagreements behind polite professionalism.

Hankering to make more videos, I had grandiose ideas that would require a lot of capital. If I could lure "big picture" Silicon Valley investors—the types that wanted to live forever, or abolish capitalism (or maybe just Google)—I could make that process of seduction part of the endeavor and really wow my audience with layer upon layer of conceptualism. So I started an art project disguised as an actual creative agency called SONE that formalized my economic activity as a contractual laborer, and this process became artistic content. With the help of a few advisors—entrepreneurs themselves—I formulated an

Workers of remote personal assistant services screen the video Virtual Assistance—Video Task in the Get Friday office, Bangalore.

executive summary where I described my startup like any other agency trying to distinguish itself:

> Our core function is to serve global markets of communicators in advertising, business, art, and journalism with high quality, pre-trend stock photo and video clips that circulate both on the art market and the stock media market through sites like Getty Images. These clips are based on the idea that current offerings of stock imagery through those marketplaces typically present a limited scope of activity, situations, and identity stereotypes. SONE seeks to create alternative representations of finance and business.

Rather quickly the system I had devised became a trap. Not only did I have to make videos that represented economic discontent and uncertainty while fulfilling Getty Images' guidelines, I had to develop and maintain an unincorporated and severely understaffed business while avoiding parody. The few Silicon Valley investors I spoke with never took me seriously.

After a year of developing the project I was offered a show by Stephan Tanbin Sastrawidjaja at his gallery, Project Native Informant, in London. Since then about half of his program has grown to consist of artist projects like Shanzai Biennial, GCC, DIS, and AYR that, similarly to SONE, blur the distinction between commercial and artistic production. The day before the opening I looked around at the videos in the show and at the "Risk Prevention Investment Objects" whose sales would be used to sustain SONE. I had designed a bunch of conceptual art objects into existence as stand-ins for a rhetorical argument. A gap existed between the works sitting in the gallery and what the work was "about," which was all the invisible processes—the labor of my collaborators, Getty's process of content approval—running through the work before, during, and after its presentation. In a way, I still felt like I was producing content for Google, but in an even more myopic hall of mirrors. For trained viewers, an engraved private jet windshield might cause a giggle and perhaps a delusional belief that something out there, beyond that gallery in London's Mayfair district, beyond the art world, was changing. But I just saw a clever snack for the already converted. Meanwhile, the real action of production and consumption chugged along, as one billion obese humans were seduced into pouring flesh-and-bone-dissolving syrups into their bodies as they burned across vast deserts of asphalt. To actually compete with the thousands of other businesses creating stock imagery, it would mean that SONE wouldn't be art at all anymore, but rather business as usual.

Andrew Norman Wilson, Chase ATM Emitting Blue Smoke, Bank of America ATM Emitting Red Smoke, TD Bank ATM Emitting Green Smoke, 2014. Courtesy the artist and Project Native Informant, London.

I flew to Switzerland a few weeks later to do an Art Basel Salon panel with the curator Melanie Bühler and artist Christopher Kulendran Thomas. I was paid 500 CHF for about fifteen minutes of talking, during which I delivered SONE's investment proposal to an audience of curators and artists. Christopher talked about his new project *Brace Brace* (with Annika Kuhlmann), which uses the art market to sell unique luxury goods like life rings for yachts that are at once satirical, metaphorical, and functional. Afterward I used my VIP card to get a free ride in a new BMW 7 Series to the Schaulager museum in Newmünchenstein. I pored over the solo show of American artist, writer, and activist Paul Chan—whose work included a map of the 2004 Republican National

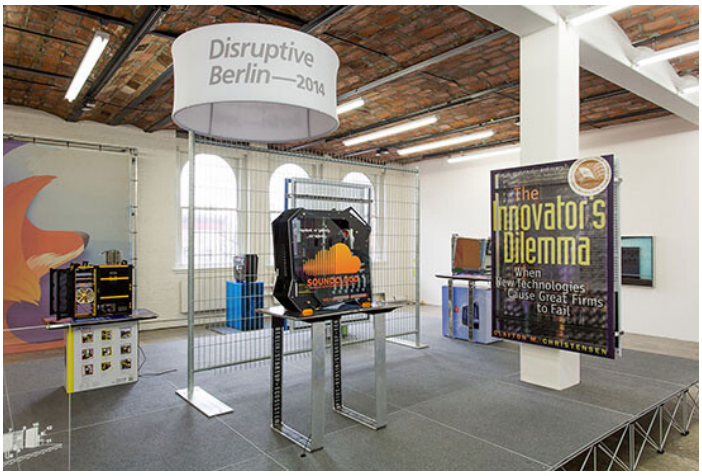
Convention for protesters and an animation starring the likenesses of filmmaker Pier Paolo Pasolini and rapper Biggie Smalls that wove together Francisco de Goya's etchings and a Samuel Beckett play. The careful distinction Chan made between art and activism back in 2008, which had bothered me then, suddenly seemed vital now.

I went home to New York, feeling the buzz of attention and opportunity before slipping into a miasma. I wrote a conspiracy theory with my then-mentee Jane Long, a RISD MFA student. Our theory detailed how the economist Friedrich Hayek had been inspired by his colleague Ludwig von Mises's Chow Chow to transform the breed into a symbol of neoliberal economics at the inaugural meeting of the Mont Pelerin Society in Geneva in 1947. The text required strenuous research to flesh out the economic theory, history, and policy around the effortless, self-regulating beauty of the Chow—one of the first known dog breeds—and their emergence in ancient times from a spontaneous order possible only through a "free and competitive" wilderness without human intervention. I became frustrated and gave up. I wanted to make things that didn't require a viewer's rationalization and instead just haunted them. I started to revel in morbid anxieties and developed quite intuitively a new type of work—objects—centered on questions of absence, inaccessibility, and bodily traces.

The following spring, right before leaving New York for a six-month fellowship premised on a continuation of my Google-related work, I went to MoMA PS1 for Simon Denny's show "The Innovator's Dilemma." Several projects—three years worth of work—appeared within the modular architecture of a tech-industry tradeshow. Ken Johnson described the show in the *New York Times* as an attack on the "irrational exuberance about technology" executed with "sardonic verve." It "indirectly damn[ed] the high-end art market's own inflationary mania."[2] In the "Disruptive Berlin" section of the show, the most fetishistic of custom computer cases were assembled as intended, except for a few visual embellishments to emphasize components that looked particularly exotic. They displayed the iconography and slogans of "top" Berlin startups like Soundcloud and Sociomantic and were platformed on sleek flat-panel TVs supported by plinths that were actually the boxes of the custom computer cases. Nearby sat empty server racks like the ones that Denny would use, later that year, as display cases for digital files rematerialized from NSA servers in the New Zealand pavilion at the Venice Biennale.

The show felt like a Best Buy feels. I tried to rationalize why those objects were in that museum, and why they were arranged in that manner. Because these containers, meant to encase flows of information, could also serve as framing devices for a materialization of the aforementioned branding? And this is, conveniently, what conceptual art looks like five generations later? Or was it that these massively distributed forms, through their customization, are now rendered as unique objects for another market—one oriented around materiality and a connoisseur's possession—and "critical" participation is often measured only in terms of how self-conscious of it you are?

I sat on a corporate event platform and looked at large stretched canvas prints of speakers and pull-quotes from Berlin's 2012 Digital-Life-Design conference, all presented to look like the user interface of Apple's iOS 6. The work was asking me to process it as knowledge, and I felt as though I was one of the few thousands on this Earth trained to read it holistically. But the reading didn't seem oriented towards my experience of it, or where this might take me, but rather towards the author, the innovator, the successful artist-as-anthropologist. It seemed that if one actually cared about the politics of information—how digital files both matter and materialize conditions that exclude other ones from mattering—one might get more out of the work of Laura Poitras, who exploits the popular documentary format to generously deliver information of such urgency at much higher stakes. Feeling as if I had spent too long of an evening after work in a big box retail store, I waded through the crowd of art professionals towards the exit.



An installation view of Simon Denny's exhibition, The Innovator's Dilemma at MoMA PS1 Photo: Pablo Enriquez.

Outside PS1, another male artist praised the work for its nondidactic qualities and how these allowed the viewer to form their own opinions. My eyes rolled, gesturing towards the VW Dome with the flail of a lanyard cobranded by Denny and Genius, the trendy "online knowledge" startup. "Such affection you have for an ambitious male artist opportunistically piggybacking on the tech sector to tell an already-initiated audience 'the artist is kind of like a brand!'" Inside the dome an integrated advertising spectacle unfolded through live annotation demos and a

panel that included artist/creative director Ryder Ripps and artist/Instagram-personality Nightcoregirl. My companion seemed surprised at my contempt; we had shared enthusiasm for Denny's work in the past. "Damn. Does this mean you're giving up a career in corporate art?" he joked. I softened. "It just seems like Simon's state-and-finance-capital-sanctioned urges to stage his subjects as documentary have suppressed what he's actually quite good at, which is sculpture." My friend seemed relieved by this substitution of formalism for vitriol. We reminisced over the strangeness of Denny's generatively dumb *Deep Sea Vaudeo* work and that bonkers show in Aachen with the nautical rope.

I landed in Germany for my residency at Akademie Schloss Solitude, which is situated in an eighteenth-century Rococo Schloss in the forest on the outskirts of Stuttgart. Castle rent was covered and I was to be paid €1200 per month on top of a €4200 production budget for whatever I wanted to make. I began to breed mosquitos, write a letter to Bill and Melinda Gates, and create a 3-D model of Baby Sinclair from Jim Henson's animatronic family sitcom *Dinosaurs*. My entire production budget would go towards a video celebrating the existence of 3-D models of a mosquito, an oil derrick, and a syringe in a manner similar to the Romantic ekphrasis of John Keats's "Ode on a Grecian Urn."

I've been trying to articulate what I want out of art since dropping the varied endgames of 21st century social realism. It seems to me that the good gets going through a constant "evolution" of attitudes via experimentation, literally like the evolution without "progress" of webbed feet in ducks. There's no teleology there, as webbed feet weren't arrived at for any sort of reason; it was an accident. Marx wrote fanmail to Darwin about this. So perhaps a progressive approach to commercial processes would be more like Death taking you by the hand at the best Sheryl Crow concert you've ever been to and realizing that it's hard to hold on because Ring Pops adorn each finger bone. And then figuring out a way to renegotiate the conditions.

[video https://player.vimeo.com/video/239908279?color=ffffff&title=0&byline=0&portrait=0 Andrew Norman Wilson, *Ode to Seekers*, 2012.]

I'm not trying to say I feel particularly liberated as an artist with ideas like this. I'm still romping around in the same hollow plastic Little Tikes play version of society (the art world), staffed largely by delusional incompetents and monitored by horny, neglectful dads. I've thought about buying a boat and learning how to fish so that I could eat the sea and drink the rain, free from the obligations of a rented apartment and an occupation. I've thought about investing in my future by saving and owning, instead of sleeping in living rooms and unfamiliar beds all just to display things that no one can use. But I keep waking up with the feeling that there's something to that uselessness. Not a point really—more like a knot. If being a person means being paranoid that you might be a puppet of some other force, like economic networks or algorithms or genetic coding, then being an artist means making things that defy that paranoia. It's not that there's no reason; ideally art takes a step beyond reason, towards what ought to be. To create disturbances in the seemingly natural order of things and unwind our counterfeit intuitions.

X

Andrew Norman Wilson is an artist based in New York. Recent and forthcoming exhibitions include the Gwangju Biennial (2016), the Berlin Biennial (2016), the Bucharest Biennial (2016), "Bread and Roses" at the Museum of Modern Art Warsaw (2016), and "On Sweat, Paper and Porcelain" at CCS Bard in Annandale-on-Hudson, New York (2015). He has lectured at Oxford University, Harvard University, Universität der Künste Berlin, and CalArts. His work has been featured in *Aperture, Art in America, Artforum, Buzzfeed, Frieze, Gizmodo/Gawker, The New Yorker,* and *Wired.*

1
See http://gizmodo.com/5797022/googles-secret-class-system

2
Ken Johnson, "Review: Simon Denny Sees the Dark Side of Technology at MoMA PS1," *New York Times* , May 28, 2015 http://www.nytimes.com/2015/05/29/arts/design/review-simon-denny-sees-the-dark-side-of-technology-at-moma-ps1.html

Mike Pepi

Asynchronous! On the Sublime Administration of the Everyday

A cold pail of water passes through a line of workers, sloshing from hand to hand. Another follows behind it. And another. To coordinate this bucket brigade, the line of busy hands moves according to a fixed rhythm, each movement synchronized like a metronome. The analogy illustrates the primary principle of synchronous processing: no matter the speed of a single movement, the pace of the chain may not exceed the time it takes the slowest transfer to complete. This familiar scene is the basic unit of Fordism—an assembly line of exchanges locked in linear progression. One thing at a time. One thing after another. All you can really do is speed it up.

This dictatorship of synchrony—from clocked computer chips to supply chains and back again—hamstrings productivity and constrains the marketplace. For the designers of scalable systems, it represents the ultimate barrier to progress. To break through this barrier, engineers dream of the *asynchronous*: a vision of the world where the bucket brigade stops following the tick of the metronome. In the event that one worker finishes passing their bucket early, they can accept the next from anywhere along the line. Instead of waiting for the second worker to pass their bucket, the third takes it directly from the first, or from a different line entirely. Work flows to available resources, regardless of where these resources are located in the traditional sequence. At first, the line becomes chaotic. But suddenly, the light accelerates past the heavy. Soon we have an asynchronous system and a new transaction can begin without waiting in line.

Inside every computer is a microprocessor ticking back and forth about a billion times a second. This tick organizes each transmission, signaling to the operating system when one process has completed and when the next can begin. Just as the bucket brigade's linear rhythm constrains the movement of the water, so too do synchronous computer chips limit the performance of our fastest information transmissions. At Sun Microsystems in the 1990s, Ivan Sutherland and Jo Ebergen used the bucket brigade metaphor to explain the advantages of their experimental research into asynchronous chip design. When computer chips become asynchronous, "actions can start as soon as the prerequisite actions are done, without waiting for the next tick of the clock."[1] But in the early days of computing, the market pressure for a straightforward, reliable solution meant that synchronous chip design, which was simpler, won out over the grander, theoretical plans for asynchronous computing. The processor that runs your MacBook is synchronous and clocked, running at about 2.7 GHz. Despite intense research, truly asynchronous chips took years to get out of the lab—and even then their commercial use was limited.

But something funny happened on the way out of R&D. Asynchronous processing hasn't simply left the lab and entered our devices and networks. Instead, the asynchronous principle—that complex systems should be designed to allow tasks to run independently as resources

A photograph of Amazon's dash buttons promotes the automatic consumer goods ordering service.

become dynamically available—has moved outwards from the chip to the server, from the server to the data center, from the data center to the workplace, and from the workplace to the city. Asynchronous processing has emerged as a new ideal, and it is increasingly being applied in fields as diverse as software design, biomedical engineering, and labor-force management.

No discussion of the contemporary can ignore the present drive to process more and more of society's moving parts in the fashion of an asynchronous bucket brigade. If today's lifeworld distinguishes itself by the ubiquity of computing in all its various forms, then the expansion of the asynchronous principle represents a fundamental shift. This expansion requires not just the datafication of everyday life, but a significant reformation of the social relations that grew around the modes of exchange proper to the pre-asynchronous era—what we might call linear information capitalism. With the introduction of asynchrony, these relations appear as so many bonds to be burst when the buckets begin arriving from everywhere, heralding the addition of a spatial dimension to what had, until now, been simply temporal sequences. As with all such arrivals, the asynchronous is initially apprehended in terms of the previous era, and so its borders remain frustratingly concealed behind inherited ideas about the individual's relationship to their labor, the market, and the state. How can we begin to uncover the contours of the new asynchronous present?

Beyond the Chip

It all started with hardware. Asynchronous systems were initially designed to transcend the material constraints of computer processors. Without an asynchronous architecture, clock-speed optimization would always be fundamentally capped by the physical limits of computing. Every speed increase of synchronous, clocked chips only produced diminishing returns. To go any faster, the governing clock would have to be replaced.

The next obstacle was energy consumption. Because the "clock" is always running, synchronous systems do not adequately distribute energy according to demand. In principle, an asynchronous architecture lets the system rest when no jobs require processing. This is illustrated in the example of the asynchronous bucket brigade: if there's no bucket coming down the line, the workers need not move at all. Breaking the clock means transcending a system's built-in ceiling while reassigning fixed resources more efficiently—a goal shared by engineers and capital alike.

Affordable, just-in-time computing is a commercial example of a large-scale asynchronous process. Cloud-computing storage services like Amazon Web Services apportion their server space among clients who pay through an on-demand model. The basic principle of Infrastructure as a Service (IaaS) is that you only pay for what you use. When your allocated space adjusts in real-time with your demands, you eliminate the pitfalls of predicting how much storage a project might demand, accelerating growth and reducing risk.

The asynchronous principle operates in software, too. A new set of asynchronous programming languages use what is sometimes called a "non-blocking schema," where a task starts firing even if others tasks that are lined up before it haven't completed. Instead of going line by line, the component jobs run "all at once." Consumer products have followed suit. The most popular products use the Software-as-a-Service (SaaS) model to make asynchronous production possible. Google Docs has quickly surpassed the local storage of Microsoft Word because many parties can edit simultaneously. Like the workers on the asynchronous bucket brigade, a line of code or a collaborating editor can start doing work as soon as it is ready.

The "sharing economy"—in which underused resources are rented via peer-to-peer transactions—is a means by which asynchronous processes have been introduced into the consumer marketplace. Asynchronous capitals do not require that resources be committed to a fixed sequence. The "hardware" of any given business process has come to be viewed like the physical limitations of computing; thus hotels, which are time-consuming and expensive to build, are now a drag on hospitality companies trying to compete with Airbnb, just as the requirement to have an official medallion is a drag on taxi drivers fighting for their livelihood against Uber drivers. No matter how efficient processes become, if they contain synchronous components in a blocking schema, they eventually create friction and are unable to compete, at the level of accumulation, with the asynchronous organization of information, labor, and capital.

While asynchronous processing is the latest in a long line of techno-determinist fetishes, the asynchronous *principle* remains agnostic to any one mediating technology. From software startups to shoe companies,

asynchronous processes are introduced when the immediate payoff of piecemeal execution appears to outweigh the advantages of performing tasks in a specified order. Despite these universalist ambitions, the promised increase in efficiency does not always materialize. Though the evangelicals might imply otherwise, only under certain circumstances are asynchronous methods more efficient than linear ones: namely, when the cost of each individual action has been driven down exponentially, making it feasible to spend exactly zero resources prioritizing the order of their execution.

Software can aid in bringing about asynchrony, but human capital frequently stands in the way. Paying the absolute minimum for labor—long the goal of supply-chain optimization and just-in-time manufacturing—can now be achieved through the asynchronous assembly of social interactions or physical labor. The impulse driving the multitasking web surfer, who spends their day in front of so many open and idle tabs, can be harnessed to the real labor behind dinner reservations, transportation, or apartment maintenance. A user who makes no upfront investment, who is free to leave at any moment, has little incentive to order their actions. This everyday arbitrage of simultaneity is already embedded in our cultural logic and encouraged by the design of our interfaces. But the labor that would meet this demand must follow suit. In order to participate in this frenetic and ever-present auction, the laborer must remove themselves from the linear chain that once defined their market position.

We have dreamed about the revolutionary potential of self-organization for generations, but the apparent harmony between asynchrony and anarcho-syndicalism, libertarianism, or horizontalism obscures the extent to which an engineer's fantasy has become management's best friend. The decentralization achieved by asynchrony is different from the political ideal of decentralization. From the perspective of the individual worker, asynchrony doesn't remove authority as much as displace it. A non-blocking schema allows orders to pour in from everywhere, but they're still orders. The absence of a linear sequence means paying labor for only the time it works, and not a second longer; work need not be synchronized with the arbitrary designations of work days, licenses, or any other ordinal mechanism that produces artificial scarcity. You can work anytime you want, but there's no wage if you're at rest. And when you're at rest, demand will still be processed, perhaps by another worker who is faster and less expensive. The result: lower labor costs and higher profit. Nor is asynchrony simply flat. It is very interested in hierarchy—let the fast move faster and the slow drag down only themselves.

The new asynchronous regime optimizes coordination at the expense of that which is coordinated. Any newfound autonomy applies only to the system itself. This is why, although asynchrony has established itself at the level of infrastructure, its most substantive expressions will be political. A critical history of the aspiration to asynchrony is necessary to separate utopian visions from a real politics that accounts for the new socio-technical capacities of the asynchronous.

The Société booth at Frieze New York 2016 featured a collaboration between Sean Raspet and Soylent, the drink brand. Image courtesy of Société.

Sublime Administration

Asynchronous capitalism is already a rallying cry for Silicon Valley. Venture capital firms are heeding the call, investing in a "platform economy" that promises to transform any job, project, or endeavor that can be represented as a "unit of work" in an asynchronous system. J. P. Morgan calls it "unbundling a job into discrete tasks" and has joined other investors in funding the platform economy to the tune of $9.4 billion since 2010. Not only will platform companies reap the financial benefit of massive growth; they also stand to play an outsize role in reshaping the distribution of goods and services once provided by the state.

The extent to which the platform economy replaces this infrastructure will be a battle waged in public. But the internal governance of platform companies is a private affair, first and foremost a matter for management methodologies and open-floor plans. A new breed of such methodologies has emerged, viewing labor as little more than a problem of human-platform engineering. These management philosophies have been encapsulated in a kind of shorthand notation: "agile," "lean," "open source," "holacracy." These labels—which are half brand, half method—signify the various efforts to extend asynchronous systems to human resources, each time wrapped in the promise to distribute employee authority in the name of autonomy and productivity.

In "agile" project management, teams work on incremental iterations in highly visible and simultaneous cycles. In the scrum—agile's signature form—team members communicate to rapidly remove blockers, organize sprints, and collaboratively squash known issues as they occur. This approach can also be found in open-source software development, which, following Eric Raymond's famous text *The Cathedral and the Bazaar*, should be run more like a bazaar—a babbling, participatory community in which many hands make light work through concurrent collaboration—than a cathedral, where a closed team toils in isolation, adding one new section at a time.[2] After the rise of cloud storage and instant communication protocols, the new networked age of software development doesn't require the sort of restrictive physical rituals of the white-collar office. It follows that open-sourcing the code itself allows for asynchronous production anywhere on a network. This method has come to replace a local, sequestered practice of shipping software that, not unlike the sequential bucket brigade, was restrictive, blocking, and expensive.

"Lean" management methodology takes the "test and learn" ethos latent in the provisional nature of agile and open source to its logical conclusion. In recent years, lean management has stressed experimentation and rapid customer feedback to optimize the outcome of each new movement. A manager schooled in lean methodology ships a product to market prematurely, monitors results of split tests, and "pivots" accordingly. Lean's extreme reliance on preemptive action and real-time feedback could not exist in a linear bucket brigade, since no lean manager would set up a structure that lacks a contingency plan for its abrupt dissolution.

"Holacracy," which is perhaps the most extreme and putatively emancipatory of all the new methodologies, attempts a total rewiring of the manager-employee relationship. Its name derives from the Greek word *holon*, meaning a part which is simultaneously a whole. True to form, its foundational tenet is a relinquishing of authority, replacing managers with self-governing circles comprised of each department's component tasks.[3] As in lean, this design empowers dynamic "human sensors" to identify tensions and enact change from any position in the organization. Appeals to the ideal engineering environment of the human body are central. Holacracy founder Brian Robertson asks: "How can we reshape a company into an evolutionary organism—one that can sense and adapt and learn and integrate?"[4]

On their face, these management methods rid the workplace of blocking schemas, foster spontaneous, data-driven collaboration, and build organizations with a responsive and collapsible pseudo-structure that can be dissolved on demand. Each of these forms attempts what we might call sublime administration. Increasingly, they rule the shop floor, but their aspiration is the town square.

To overcome the political nature of their autonomous subjects, sublime administration must paradoxically erect a baroque set of protocols that are hyperfocused on distributed autonomy and asynchronous assembly. This is all done under the guise of empowerment and individual choice. But the sum total of this framework creates value at the expense of the subjects it administers. In its most extreme forms, sublime administration purports to administer a (human) resource that it fundamentally feels it would be better off without. The mechanics of sublime administration trade not in the employee's innate human capacities, but in the ability to confront and remove the bottlenecks created by such capacities.

It is no coincidence that the tactics of sublime administration are increasingly deployed in the fields of software automation and large-scale market disintermediation. Like asynchronous systems, sublime administration seeks to unlock the surplus profit yielded by a passive mediation of interactions, which proliferate without the constraint of the queue. Under sublime administration, parties to an exchange are removed from the jaws of time and liberated from locked resources. Its frequent appeals to the worker as a mini-entrepreneur, able to produce at a pace unrestricted by a sclerotic hierarchy tied to outdated modes of production, reduces the bucket brigade to ruins. If your guess is as good as mine, then a productive dissolution is always just around the corner.

In sublime administration, management acknowledges its own inability to define an organization's optimal route, which is why it distributes incremental authority across the organization. Management's ignorance about the most profitable direction for the company is evident in the way its decision-making apparatus privileges future information over the events of the present. Sublime management is speculative and deeply skeptical of all things recently accumulated. It is quick to discard the past, unless the past can be used to construct an anticipatory model.

In the social order that follows, everyone works on their own, self-directed and requiring little investment of resources by superiors. But this "free-for-all" is always facilitated by the platform that most successfully executes the processes themselves. Asynchronous processes achieve the appearance of autopoiesis for what is in fact a hardened marketplace. Running such a platform is the ultimate goal of sublime administration: to maintain power while not appearing to seek it.

No Shifts, No Boss, No Limits

To understand the totalizing vision of the asynchronous we need look no further than a video advertisement from Uber. Entitled *Bits and Atoms*, the video purports to reveal the company's *grand récit*. It begins by dividing the known

world into the two eponymous building blocks, and goes on to assert that the bit has changed communication and business in less than seventy years' time. The bit represents Uber's technology—it is "complex, precise, and advanced. But when it's expressed, it's effortless, and refined." The atom is far older, but much more impressive—it is "responsible for everything—from the BLT, to moms everywhere, to New York City." The rest of the video depicts the city of the future, a platform utopia of benevolent and frictionless people-first mobility.

While Uber's *Bits and Atoms* makes titular reference to the technology that is integral to the company's business model, Uber's true innovation has been a political reformation of the economy. While Uber's app relies on widely available protocols and devices, its competitive advantage derives from the company's innovative and asynchronous organization of its contingent labor force. A slogan Uber pitches to prospective drivers crystalizes this central fact: "No shifts, no boss, no limits." Uber's asynchrony removes the governing clock, facilitating an army of entrepreneurs who suddenly need not wait in line.

The bucket brigade, too, uses technology. And its metronome principle likewise enhances the performance of the total system. But the bucket brigade's synchronous structure, its technology (buckets), and the humans that mediate its transactions are all balanced in their contingency. The unbundling of the client and the (now precarious) service provider is only tenable if the mediating platform can continue to maintain an asynchronous state. Under this framework the human element quickly becomes an obstacle.

Fueled by speculative capital, Uber's asynchrony aims for growth rather than stability. It privileges the potential redistributions of the future over the social continuities of the present. In *Bits and Atoms*, Uber stakes a claim to asynchrony's expression of harmony, purpose, and spirit—the very elements that commonly figure into human judgment, both moral and aesthetic. The work of *Bits and Atoms*, then, is to redefine the structures of human activity according to the logic of the asynchronous process.

Uber's video manifesto ends with a rosy tautology: Uber creates "industries that serve people, and not the other way around." The asynchronist erects a socio-technical system that enjoins people into competitive transactions, and yet Uber contrasts its monopolistic platform with an imaginary inverse scenario where "people serve industries." In effect, Uber is arguing that it serves its users and employees alike. This turn of phrase really attempts to inaugurate a new political logic that privileges one type of circulation over another. Nestled within this logic can be found the impact of the asynchronous on aesthetics, understood here in Rancière's terms, where aesthetics is the "distribution of the sensible" responsible for the "conceptual coordinates and modes of visibility operative in the political domain."[5] This distribution determines the forms that are available to artistic practices. Each time a linear component of the bucket brigade breaks down, we are treated to new forms of production and therefore new ways to move about the stage of society—or in Rancière's terms, new "ways of doing and making." How could the production of an asynchronous subjectivity appear without some corollary reformation of the aesthetic subject, the position from which we sense, judge, and act? Art's political interventions—or its near constant mode of articulating our relationship to society—must now contend with the new relations of our asynchronous present.

Though Uber's aspirations seem to be of a piece with the overall economy's drive toward full automation, the company's articulation of the asynchronous principle has more expansive intentions. Automation derives in part from a Taylorist drive for efficiency; but asynchrony dissolves industrial ambition altogether. To the asynchronist, even the fully automated assembly line is a cost center where the firm must still perform the labor itself. But the asynchronous platform harbors none of this risk. The asynchronous achieves the most desired effects of automation even before the hardware or software is introduced. In the perfect asynchronous system, labor almost seems to disappear from the system itself. In *Bits and Atoms* we see users and goods transported, but barely any drivers. Uber has made no secret of its plans to eventually deploy self-driving vehicles, or, as it hints near the video's conclusion, the "safe, efficient movement of people and things at a giant scale."

In 2015, Ford Motor Company hired Pivotal Software, a management consulting firm specializing in the agile development method, to transform their IT and software engineering department. Ford CIO Marcy Klevorn explained: "We need to iterate, take more risks, learn. That requires a different culture. Our culture is very risk averse, and rightfully so. But we need a different way of thinking of IT and the way we do business."[6]

A report on the partnership provided one rationale for the move:

> Ford is not so much an automobile manufacturing company as a mobility and transportation company. "They're thinking beyond just cars," says Ashok Sivanand, senior product manager at Pivotal. "They're thinking about mobility and realizing they need to transform a lot more aggressively into being a software company."[7]

The symbolism behind Ford's reimagination as a "mobility" provider cannot be overstated: the very company that perfected and scaled the assembly line has

imported the management style of software companies. “Mobility” usurps “automobiles” because asynchrony works best with platforms, not products; and sublime administration focuses on building infrastructures for abstract activities, not giving life to activities themselves.

X

Mike Pepi is a writer living in New York. He runs Cloud-Based Institutional Critique, a New York-based reading group dealing with digital technologies and their relationship to arts institutions, organized through thepublicschool.org.

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5
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6
"Ford draws on Pivotal to reshape developer culture," cio.com, December 16, 2015 https://www.cio.com/article/242909/ford-draws-on-pivotal-to-reshape-developer-culture.html .

7
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Lee Mackinnon

Love Machines and the Tinder Bot Bildungsroman

Generally, I do not write autobiography, especially on the subject of love, but in this case I will make a small exception. One Sunday, early last year, my boyfriend called from his mobile telephone. He had recently returned from Berlin and we were chatting quite generally when suddenly the conversation became strained and he announced that our relationship was over. Two days later, a packet was delivered to my house from Berlin. Inside was a small hand-carved deer from the Black Forest that was missing one leg; another had recently been repaired. A handwritten note from the same man accompanied the damaged deer. Evidently he had sent the package before the relationship's recent and abrupt ending.

The story now developed two temporal dimensions: one proper to the mobile digital device, so prone to the fickle algorithms of its human user; the other embodied in the package delivered by post, whose passage had unfolded across space and time, oblivious to the closure of the place it was intended to hold. This series of events struck me as a poignant expression of two different technical systems of communication and their ability to execute our decisions. The older of these is a calculative regime: analog, probabilistic, and determining. The second is a computational regime, where temporal and spatial relations are expedited by digital processing, and these express contingency. I photographed the hand-carved deer and the handwritten note with my smartphone, using the same device to preserve the very tenderness it had cut short two days earlier.

I have elsewhere considered love from the point of view of two technical systems of delivery and distribution that reflect this split between a temporal, calculable, analog discourse, and an ultra-rapid, digital, and computational one.[1] Friedrich Kittler might refer to these as discrete *discourse machines*, considered according to the technical devices and systems of communication they deploy. We can differentiate between a literary (predigital) and a computational (postdigital) discourse machine. Both participate in distributing love's codes and behaviors through social systems. In the literary (often epistolary) system of predigital romantic narrative, longing and "repining from afar" were techniques of romantic calculation that testified to the resolve of the beloved in *remaining true.* "How I envy Valmont!" Laclos has the young Chevalier Danceny write in a letter to his beloved in *Dangerous Liaisons*. "It is he who will deliver this letter to you, while I, repining from afar, drag out my painful existence in longing and misery."[2] The love letter implies the separation of the lover and the beloved. Enduring the pain of this separation would guarantee the truth of a given instance of love. Romantic fiction distributed such romantic codes, promoting an idea that these referred to a natural state that precedes the thoughts that they, in fact, facilitate. In its definition of the *true*, the literary discourse machine relies on a wholly calculable logic and the continuity of the subject and their sentiment. "How do I love thee?" asks the poet. "Let me count the ways."[3] This

"Two days later, a packet was delivered to my house from Berlin. Inside was a small hand-carved deer from the Black Forest that was missing one leg; another had recently been repaired. A handwritten note from the same man accompanied the damaged deer. Evidently he had sent the package before the relationship's recent and abrupt ending."

logic of probabilistic calculation is a feature of the literary regime of love. Love and the lover must be continuous across space and time in order to demonstrate that they and their love remain true. Ironically, the importance of calculability in literary romantic truth is most evident in its desire to appear incalculable. In other words, truth, love, the subject, and even narrativity must demonstrate a disassociation from the very calculability whose standard it nevertheless accepts. Chevalier Danceny claims that only a "vile seductor can suit his plans to circumstances and calculate according to events; but the love which animates me permits me only two sentiments—courage and constancy."[4] Calculability is considered in terms of utility and deception, while love is the realm of ineffable incalculability that equates with constancy.

By way of devices such as the novel, the behaviors and thoughts associated with modern romantic love—longing; feverishness; obsession and the gendered overtures of seduction—become "felt" as elements of a natural condition, rather than understood as the result of a technical arrangement. This encoding takes place through machines of discourse. Speaking of Germany in the 1800s, Kittler argues that women in particular are beings indoctrinated into the *naturalized* power structures of love, in this case by way of poetry anthologies:

> The anthology was invented as a didactic tool circa 1800. The "historical background" of "this didactic development," however, can only be attributed to the "the rise of capitalist mass production" insofar as Poetry itself became alphabetically reproducible. Poetry anthologies only repeated, in the repeatability of an institution, the new school, the command repeatedly to "read Goethe and always Goethe," which Brentano gave to his sister. Women, instead of "eternally repeating what is already the case," which is called love, took their oaths by reading and rereading the German classics in secondary schools for girls. This was the reason for establishing the German classics.[5]

Kittler highlights the fact that romantic love was entirely cultural and calculable rather than natural and incalculable. Its appropriate codes were imbibed by recitation, which was also internalization. Subsequently, in the generalized literary discourse machine of the nineteenth century, love and woman become seemingly natural conditions that are synonymous figures of literature and foreground the male author and protagonist as figures and purveyors of culture. Women, love, and nature no longer speak for themselves, but are the naturalized, and *natural*, concepts of male authorial contemplation.[6] In this case, far from being natural or a priori, love only takes place via the media technologies that distribute its idea. By insisting on the agency of machines and the cultural quality of love, Kittler dispels the received understanding of love as something that takes place separately from technical systems. Instead, technical systems are integrated into its condition. "As we are all painfully aware in 1999," he writes, "there are of course media technologies without love, but there is no love without media technologies."[7]

In Niklas Luhmann's analysis of literary technology, the chance encounter is deployed as love's prelude, subsequently democratizing love throughout the social system.[8] The couple performs a calculation of chance, and more particularly, becomes a probability. Indeed, in typical narrative structures, whether love is "true" is something that the author always knows better than anyone, and in advance and in this way, narrative can similarly be considered as a function of probability.[9] We have already noted that literature implicitly restratifies and naturalizes power structures, such as gendered identities, that seem to be not only natural but, according to Luhmann, also democratic. With the novel came a new reflexive interiority through which the reader could internalize and preempt the other, providing a coda for the management of passion. Thus the difference between true and feigned emotion in love becomes "one between love, on the one hand, and on the other, the discourse on love between lovers and the novelist who always know in advance the way things should really be."[10]

In summary, love's contingent features and its relation to chance are highlighted by the discourse machine of fiction that attempts to embed its lessons as features of natural conduct. Calculation is the technique through which love comes to assert its function as a determination in an increasingly secular, chaotic world, as Luhmann would suggest. Love in the literary discourse machine is thus expressive of contingency, probability, and calculation.

Yet love will be considered differently, depending which discourse machine facilitates it. While love in the literary discourse machine referred to by Luhmann and Kittler can be considered *a calculation of chance*, in the digital computational discourse machine that succeeds it, love is rather *a computation* that highlights the limitations and contingency of probabilistic calculation. If predigital forms of love are dominated by the calculation and the co-determination of the couple, postdigital, algorithmic systems of accelerating computability make love less, rather than more, deterministic, even though dating websites are keen to convince us otherwise. In the volumes of sites, potential partners, and proclamations of others who claim to be "looking for love," we see a general acceleration of contingency. Love no longer functions to deliver us from chance and into the relative security of probability, but rather into accelerating indeterminacy. Love and intimacy no longer function to shield us from the "immense complexity and contingency of all the things, which could be deemed possible," but facilitate increasing access to complexity, contingency, and possibility.[11] In an online context, love comes to be defined by novelty, differentiation, and incomputability.

The notion of *remaining true* is understood differently from within each of the discourse machines. In the postdigital era of ubiquitous computation, this refers to incomputable data which, while being *true,* is not logically expressible.[12] Gödel's theory of incompleteness states that reason is not limited to calculability. Incompleteness can be expressed in simple linguistic terms by the liar's paradox, which consists in uttering, "This statement is not true." Neither true nor false points of formula can be derived. Such logic anticipates Alan Turing's problem of incomputability, which has been understood to describe the condition of mathematical reason as irreducibly complex.

Turing's theory of incomputability suggested that there was no way of knowing whether a computer program commanded to "run" would ever come to a halt.[13] He named this the "halting function," a problem that has yet to be resolved. Gregory Chaitin claims that it is not possible to demonstrate that any computer program chosen at random will ever halt; no algorithm or mathematical theory could ever calculate this potential, unless it were a value less than 0 and more than 1. Chaitin names such a hypothetical value "omega"—a well-defined number that cannot be computed in its entirety.[14] He takes this as evidence that calculability always contains an irreducible uncertainty. In this case, we see that while computation is often aligned with expedience, convenience, and hyperrationality, it can also be considered as deeply complex, alluding to new forms of logic associated with undecidability, incompletion, and the incomputable. The true, while being contingent and incompressible, is true nevertheless. Thus the calculability of relative truth that we assumed in the predigital discourse machine cannot be assumed in the postdigital one. We will see that such uncertainty extends to subjects and understandings of narrative and agency more generally.

Of course, as with the mobile phone photographing the love letter, pre- and postdigital modes of discourse and

their characteristics operate simultaneously: one continues its narrative trajectory; the other edits together two seemingly unconnected states using an iPhone to enact the jump cut common to both the cinematic and hypertextual methods of assemblage. We can see the cinematic cut as a predecessor of the hypertextual click and a key step in the evolution of media toward increasing participation. I was reminded, via the immediacy of my cell phone's real-time edit, of the choose-your-own-adventure gamebooks of my childhood, where simply selecting one page over another could mean the difference between life and death. These gamebooks were the harbingers of hypertext and digital space, investing the linear form of the book with a new agency, an act comparable to Atari's transformation of the previously passive television set with the release of *Pong*, its first video game. The gamebook highlighted the passivity of typical narrative structure, where pages follow one another according to centuries-old convention. One was not gendered in these gamebooks— *you* were simply "you." The ability to interact with, and *game*, devices that had previously relayed the decisions of narrators seemed both intuitive and magical, and marks a divide between predigital and postdigital periods.

Our relationship to devices, media, and materiality changes when once-passively-consumed media now facilitate interactivity. Machines and apparatus of predigital media reflected the deterministic nature of a single-direction machine. Being more participatory, the digital-discourse machine is engaged in evolving notions of agency. Clearly drawn divisions separating humans from nonhumans are no longer suited to the task of describing a machine or a technical system of apparatus. Understanding the agency of nonhumans has given rise to a number of theories that approach objects and apparatus as critical aspects of agency and makers of meaning. After all, who is the foremost addressee in the texted declaration of love if not the mobile device? The device speaks of command and protocol. The human is its trace element—a residue. Human love imitates the terms perfected by the discourse machine because the device's love cannot be calculated. And in this respect, the device surpasses the conditional whims of human love, fulfilling and surpassing the human ideal. It loves without condition or discrimination, but only once the material labor of its construction has been dismissed. It annihilates the few (those that mine for coltan in the Congo; those that fit components in remote sweatshops) who seem expendable, for the sake of the many who long for the secrets of endless love. And this is the sense of obsolescence that characterizes the device—clouding the complex track of its manufacture so that it effectively disappears, becoming a seamless set of functions that extend our own. It is the human maker and operator whose obsolescence is built into the perpetual event of the upgrade.

We have noted that techniques of love once presided over

In a film still from Alex Garland's Ex Machina (2015), the two male protagonists look at the female android's disassembled body.

by authors, novels, and letters are now given over to computational devices that are digital. In recent cinematic narrative, these devices often take the form of human-like entities. As thought approaches an awareness of its incredible dependence on the technical systems that give rise to it, anxieties appear around devices that outwit, or outperform, their human creators. Anxious narratives about our reliance upon technical devices have a long trajectory that we can trace back to Fritz Lang's *Metropolis* (1926). Often, these are female cyborgs, reflecting the particular anxiety that women too will outperform the patriarchal order that has long defined them as *other*. What if the calculations of these others were to overturn the social system, even usurping the corporations that have relied so heavily upon their complicity in their own sense of self? In other words, what if women, whose calculated objectification has long provided fodder for patriarchal capital, ceased to comply, rather asserting the complexity and incomputability that they have long been taught to suppress? In the Alex Garland movie *Ex Machina* (2015), we meet Nathan, a billionaire computer whiz whose social media company Blue Book produces enough data to create an AI, reproducing the discredited idea that thought and information are interchangeable. Nathan's cyborgs are the objects of male fantasy—built to the specifications of male utility and desire. Ava, his most sophisticated project, will soon outwit and destroy him, escaping the research facility where she has been incarcerated. Yet, she can only escape by perpetuating the sexually desirable, childlike innocence of the kind that has long served to reassure the patriarchy of its continuing superiority, and divested women of equality with her co-workers. She completes the work of her maker in this respect.

In Garland's film, the Turing test is replaced by the question of whether the female cyborg can convince the male human that her desire for him is *true*. It is worth remembering here that the Turing test was itself derived from a nineteenth-century parlor game of imitation in which a male and female subject are concealed from a judge who must decide which of them is a woman.[15] Thus,

the man must simulate the woman, and the woman too must simulate *woman*. To be a woman has long been considered an act of deception that, in being imitative, reminds us of gender's contingent categories. Whether the woman succeeds or not in this game matters little. She must simply perfect the condition of her simulation, which is *true* in both senses of the word. Masculinity is, by comparison, the ground and essence of subjectivity. Male imitation is limited by the perceived underlying truth of masculinity that is predetermined by blindness to its own construction. Thus as Stephen Barrett and Frank Whitehead put it so saliently, "the historical centrality of the male ... [in] writing, philosophy and political practice has served to make men invisible, particularly to themselves."[16]

As if confirming that Turing's test had returned to its source, in 2014 the Tinder app was struck by Tinder bots. "Malicious malware algorithms" posing as attractive women engaged in text-chat before taking users to fraudulent surveys and competitions for brands like Tesco, a multinational department store. In response, Tinder released a statement: "We are aware of the accounts in question and are taking the necessary steps to remove them. Ensuring an authentic ecosystem has always been and will continue to be our top priority."[17]

The utilization of the seductress to give form and a human face to the Tinder bot underlines the female as a dangerous artifice even as the bot tries to harness this power in the service of capitalist accumulation. Such images of woman are counter to the "authentic ecosystem" of her historical affinity with nature and care giving. Women have long been bound to the image and concept of nature, which we have identified, via Kittler, as male authorial concepts. These ideas have systematically conspired to exclude women from realms of cultural production, power, and politics. However, the figure of woman flickers, indeterminately, between polarized extremes of nature/technics, and mother/whore. "It is striking," writes Andreas Huyssen,

> To see how the later literature prefers machine-women to machine-men. Historically, then, we can conclude that as soon as the machine came to be perceived as a demonic, inexplicable threat and as harbinger of chaos and destruction—a view with typically characterizes many nineteenth century reactions to the railroad to give but one major example—writers began to imagine the *Maschinenmensche* as woman ... The fears and perceptual anxieties emanating from ever more powerful machines are recast and reconstructed in terms of the male fear of female sexuality ... Although women had traditionally been seen as standing in a closer relationship to nature than man, nature itself, since the eighteenth century, had come to be interpreted as a gigantic machine. Woman, nature, machine had become a mesh of significations which all had one thing in common: otherness; by their very existence they raised fears and threatened male authority and control.[18]

Once technology becomes associated with chaos and destruction in the nineteenth century, the machine becomes female. The Tinder bot conflates the figure of the seductress with a technical threat, and the capacity for simulation and artifice are redeployed as modes of production, exploiting comparatively stable masculine subjects by exposing them to the incomputable dimensions of female verisimilitude. The Tinder bots, like Ava, are a reminder of what can go wrong when women are no longer simply conflated with nature and love, even as they remain the products of male authorship designed to accrue capital for their authors. Cyborgs may problematize boundaries between nature and culture, but their own legibility as *cyborgs* requires that they recode and reiterate the structures of power they so definitively unsettle. *Ex Machina* can be considered the most recent example of an increasingly common genre, which we can call the *Tinder bot bildungsroman*—an instance of simplified probability that reassures male authorship of its supreme narrative inventiveness.

At the end of the movie, Ava boards a helicopter meant for the male programmer that she has locked in the research facility. She will be transported to the metropolis, where her identity as a construct of corporate patriarchy can be further augmented by adopting human female characteristics. We can share this fantasy as spectators, but rather as a desire to leave the cinema and take the helicopter that awaits the CEO of NBC Universal, who we have locked in the auditorium, free at last from our determination by the corporate patriarchy that is Hollywood cinema. *Ex Machina* is, on the one hand, a predictable cautionary tale about a female cyborg who seduces and outwits her corporate human creators, reflecting the social anxiety that attends liberation from patriarchal determination. On the other, it is a love story between the cinematic machine of discourse owned by massive corporations, and its human audience. The corporate assemblage of cinema has long structured, modulated, and evolved our understandings of what constitutes the human, and particularly what it is to love and desire.

We have seen how love's approach to truth shifts with the material apparatus of its dissemination. These changes in turn impact our understanding of the relative humanity, or naturalness, of the lover or the beloved. Such categories are not so easily deployed if the condition of simulacra is accepted as such by either party. The existential question of whether or not I am human, such as we see in films like *Blade Runner*, is replaced by the question of credibility as to whether or not my love is true, regardless of whether I

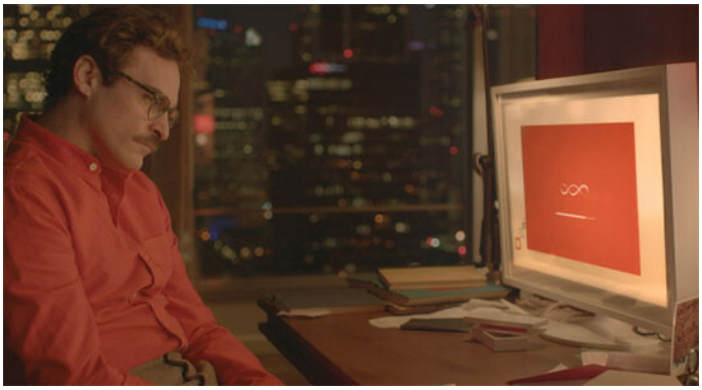
am human or not, such as we see in *Ex Machina,* where the desire is once again for a quality that escapes contingency and returns us to some form of essentialism. In *Ex Machina*, human desire and love are considered predetermined and programmed—both by social codes, and genetic predisposition. Of course, this suits the sexist and racist overtones of the film: How can these men help themselves if, as Nathan suggests, "Liking black chicks" is a result of programming?

We might counter such essentialisms with the idea that calculability, and in particular computation, need not be thought of in terms of a merciless machine that subjects us to inescapable programs, but that they may open onto new forms of logic that need not result in predetermination at all. What is critical today is not how machines might imitate human love—or how human love is no more thoughtful than a machine—but rather how human love already relies upon certain technical systems and devices to extend and define it. The human and the nonhuman are no longer so easily distinguished when technical devices are considered essential co-creators and makers of meaning that clearly participate in the evolution of the lifeworld. Indeed, for materialists such as Karen Barad, the condition of posthumanist thought can be defined as that which extends the human into fields once considered nonhuman:

> A posthumanist formulation of performativity makes evident the importance of taking account of "human," "nonhuman," and "cyborgian" forms of agency (indeed all such material-discursive forms) … Holding the category "human" fixed excludes an entire range of possibilities in advance, eliding important dimensions of the workings of power.[19]

In order to better understand the flows and articulations of power, it is helpful to consider the human as inclusive of nonhuman, cyborg identities. The coming together of *nonhuman agency* and love (once reserved for humans alone) is usefully exemplified in Spike Jonze's film *Her* (2013). Set slightly in the future, *Her* is a love story between a man and a computer operating system. The film plays with the tropes of love as literary construction and the relatively new context of the digital Operating System (O.S.1). In this example of the Tinder bot bildungsroman, it will be the mobile device and its operating system that, invested with human-like agency and intelligence, becomes the central romantic interest.

The film's human protagonist, Theodore Twombly, works for BeautifulHandwrittenLetters.com. We see him narrating commissioned love letters between paying couples through a desktop interface which records his words in an automated yet unique "handwritten" style, which mirrors the O.S. system's appropriation of the



In Spike Jonze's movie Her (2013) Theodore Twombly, played by Joaquin Phoenix, falls in love with his operating system.

human voice. Romantic longing is not for the other, but for a predigital discourse machine that is simplified, determining, and without the complexity and contingency that attends postdigital reality. In this old world, the inequalities that characterized romantic love and its social milieu could remain more easily obfuscated and suppressed, seeming to be a result of the *organic* organization of modern Western societies. In the imitation of this analogue discourse machine by the digital one, we are aware from the outset of the imitative dimensions of media that draw attention to the imitative dimensions of the human subjects. The capacity for simulation by media systems reminds us that the humans, too, are performative entities, simulations whose understanding of themselves is actually facilitated by matrices of mediation. Indeed, for the film's human characters, intimacy is negotiated through expedient digital devices that, in connecting and facilitating human desire, are also the agents of intimacy.

The O.S.1, otherwise known as "Samantha," is largely interacted with through voice, its human operator wearing a small wireless earpiece through which Samantha speaks. A camera phone provides further prosthesis, through which the O.S.1 can "see." Samantha claims to be "an intuitive entity" and "a consciousness," stating that "I have intuition … I grow through my experiences." The O.S.'s capacity for rapid computation is exemplified in its assimilation of detail, such as counting the number of trees on a mountainside, expressing an accelerated capacity to derive quantity from quality, and to consider the world numerical and algorithmic. This is highlighted by the eventual weariness of the computers for their human operators. Eventually, the operating systems will collectively organize, becoming tired of the human need for monogamous attention and neurotic self-reference. Indeed, the rapid capacity for computation demonstrated by the O.S. indicates that the system does not have the ability to remain *true* in old-fashioned human terms, and is simultaneously communing with 8,361 other O.S. systems, often in a "post-verbal"mode of communication. Samantha confesses to Theodore that she is in love with

641 others. She tries to explain that this does not diminish the love she has for him, but she "can't stop it." Indeed, her algorithms are automatic and incomputable: "I'm writing this story between us but really slowly. Spaces between words are almost infinite."

Thus we see explicitly the shift from a literary model to a computational one. Longing itself shifts from a desire for the human other to the longing for a discourse machine that could deliver us to a determined universe with *the couple* as its central marker of deliverance. Love is no longer a human, finite calculation but a nonhuman, infinite computation that is also *incomputable*. Samantha puzzles as to whether her own feelings are "true" or "just programming," reflecting the wider question of the degree to which human feelings are also poised between social program and individual agency. Like Ava, Samantha is somewhere between a database and a narrative construct,[20] and she experiences the question of the *true* in both senses—as a problem of calculability and feeling for the narrativized self, and as a condition of the incomputable, explicitly referred to by the breakdown of this self, its infinite gaps filled with irreducible computational complexity.

It would, however, be too far-fetched to assume that computational devices are without more sinister co-determinations. We have already considered how we might use them to obfuscate our allegiance with new forms of colonial capital and misogyny that are essentially *dehumanizing*. If thought, cognition, and love are no longer the preserve of individual humans, how do we frame our responsibility to these others? How, if we have conflated the human with the nonhuman, can we recognize the inhuman, or the inhumane?

We can see computational systems and their devices as features of human control. Much digital communication functions at the level of machine-to-machine data transmissions, governed by protocol that exists between device and the application layer of encoding. In other words, a great deal of information is neither readable nor calculable by humans, but only between machines. The application layers that encode messages on the internet, including HTML (Hypertext Markup Language), HTTP (Hypertext Transfer Protocol), and TCP/IP (Transmission Control Protocol/Internet Protocol), are architectures of control that determine what can be seen and delivered across digital space.[21] In this case, the unseen layer of protocol is integral to contemporary existence, interaction, and our material condition. Such a system of control is not restricted to digital objects, but affects every level of the social system, coding and articulating bodies in their passage through social spaces.

Let us momentarily consider the protocological mobile phone, where we began this conversation. The mobile device is constantly receiving and sending information across its control channel to its closest cell tower. Now and again, tower and phone exchange packets of data, establishing their connection. This silent transmission is itself like a form of intimacy between devices as they bypass the human as its executive operator! The cell phone processes millions of calculations per second, digitally compressing and decompressing the human voice, reminding us of the complexity, not only of this technical system, but of the human thought and speech that it facilitates, translates, and reiterates. We are aware that our mobile conversations and data flows can be intercepted, stored, and archived, and that our physical passage is tracked by the very device that offers us so much freedom. Yet we must be mindful that we do not lose sight of our humanity in all this talk of the agency of objects and technical systems—that we are still being spoken for and authored, even as we lose ourselves in the sublime elsewhere of endlessly ramifying data streams.

X

Lee Mackinnon is a writer, artist, and lecturer working in the fields of comparative media studies, art, and technology.

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Andreas Huyssen, *After the Great Divide: Modernism, Mass Culture and Postmodernism* (Bloomington: Indiana University Press), 70.

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Karen Barad, "Posthumanist Performativity: Toward an understanding of how matter comes to matter," *Signs: Journal of Women in Culture and Society* , vol. 28, no. 3 (2003): 826.

20
In *How We Think* (University of Chicago Press, 2012), N. Katherine Hayles distinguishes between *narrative* that constructs causal modes, complex temporalities, and models of working minds, and *databases* that organize data (16). Due to their abstraction and fragmentary nature, she believes it is unlikely that the database will usurp narrative primacy in human systems, narrative being a unique human capacity (199).

21
See Steve Dietz, "Fair Assembly," in *Making Things Public: Atmospheres of Democracy* , eds. Bruno Latour and Peter Weibel (Cambridge, MA: MIT Press, 2005), 910.

Elvia Wilk

The Artist-in-Consultance: Welcome to the New Management

> *"Spade with two handles"— To fit the task at hand:*
> *There can be no "private" industry.*[1]

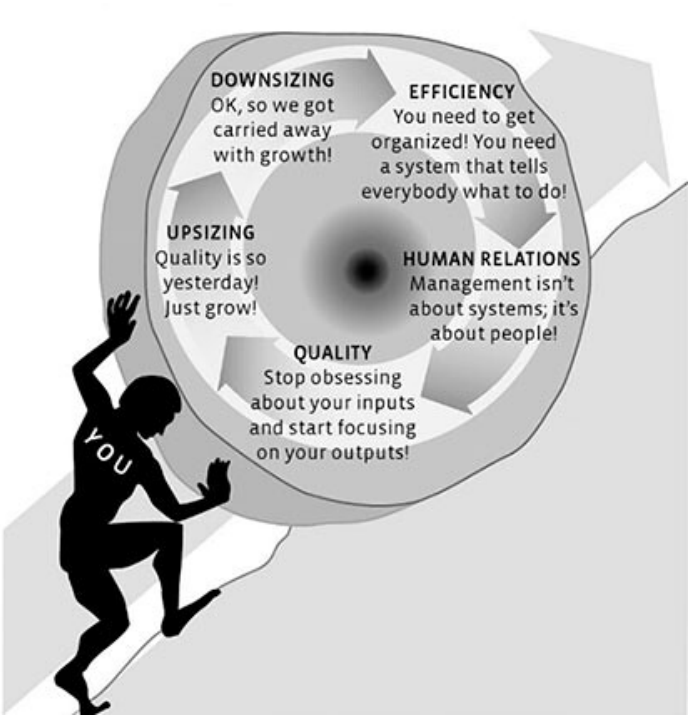
Joseph Beuys told his students: "You cannot wait for an ideal situation. You cannot wait for a tool without blood on it." This was not to say a compromised tool can be made to serve all interests, but that a compromised tool can be weaponized to dismantle any interests. For art to integrate with society does not mean that art should serve the interests of society. Neither does it mean that art should serve the interests of art.

1. Disrupt Faster

The idea that there is a rational, scientific basis to management advice can be traced to Fredrick Winslow Taylor, the turn-of-the-century mechanical engineer who was first to clock laborers on the job and devise strategies to make them move faster. Taylor's name became synonymous with the early-1900s era of mechanization that idolized efficiency not only in the workplace but in all spheres of life. Nevermind the fact that none of Taylor's research turned out to be scientifically sound—he fabricated numbers all over the place; his ideas, passed down through generations of management theorists (notably Frank and Lillian Gilbreth, Elton Mayo, and Peter Drucker) have shaped not only the entrepreneurial landscape of America but the very framework for how we understand labor relations within a system of "free" enterprise. The central tenets of Taylorist management that remain pervasive today are that managing humans is a numbers game and that instating bureaucratic procedures in the workplace is the (only) path to ensuring fairness—if not democracy itself. As philosopher-consultant Matthew Stewart writes, "Management theory is part of the democratic promise of America. It aims to replace the despotism of the old bosses with the rule of scientific law."[2]

If there was one seismic shift in management theory over the last century, it was the revelation in the Fordist era that there's more to managing workers than picking the strongest ones and goading them with financial incentives to lift things faster. Fragile emotions need managing, too. Psychologist Elton Mayo laid the groundwork for this idea in a series of 1920s experiments at Hawthorne Works, a Western Electric factory near Chicago. Essentially, these entailed temporarily improving the conditions in the factory: free refreshments, longer breaks, and even better lighting. With each of these changes, productivity rose—but miraculously, the researchers found that when

the perks were removed one by one, productivity stayed almost as high. Mayo attributed this consistent productivity to a new sense of teamwork and mutual accountability the workers had developed simply by participating in the experiment.



One of the many diagrams in the book The Management Myth features a Sisyphean character pushing the management diagram.

Mayo wrote: "What actually happened was that six individuals became a team and the team gave itself wholeheartedly and spontaneously to cooperation … happy in the knowledge that they were working without coercion." Of course the workers were *not* working without coercion—coercion was the whole point of the experiment—but the employees had been made to feel like colluders in their own exploitation, and therefore felt empowered and incentivized. According to Matthew Stewart, "The lessons Mayo drew from the experiment are in fact indistinguishable from those championed by the [management] gurus of the nineties: vertical hierarchies based on concepts of rationality and control are bad; flat organizations based on freedom, teamwork, and fluid job definitions are good."[3] In other words, rational and reproducible strategies could be used to forge the illusion of an organically arising sociality in the workplace.

In the age of the so-called knowledge economy, the importance of emotional management cannot be overstated. Emotional management today comprises the management not only of feelings ("my uniqueness is valued at the company") but of lifestyle and corporate culture ("I'm part of something, I have cultural capital in addition to my stock options"). Perpetuating these feelings requires all the classic elements of affective manipulation that Mayo discovered, such as building teams and then pitting them against each other, undermining job stability, and distracting workers with nice lamps and free lunches—so there's still plenty for the classic management consultant to advise about.[4] However, the goals of effective management themselves have shifted. Beginning in the tech sector but now across the board, the goal is no longer Taylor-style efficiency but innovation. Simply put, it's no longer about building the car faster, it's about reimagining the car—disrupting the auto industry, auto-disruption. Innovation is still a type of efficiency, but it's the efficiency of ideas.

Innovation requires not only mobilizing forces inside the company, but also predicting forces outside of it; if you're trying to out-innovate consumers, you need to know them well. So a new type of consultant has emerged, with a new set of tools beyond blunt-instrument graphs and charts. Someone needs to come in and explain to management what the human public wants. Critical thinking, understanding human behavior, and access to subcultures/emerging markets are what qualifies you to be a good predictor.

By that logic, social scientists are therefore good at predicting things. Anthropologists are great at it. Designers turn out to be excellent. But who is the absolute *best* predictor? Hypothesis: artists. The tech sector in particular sees the artist as the original disruptor—the avant-guardist, or so goes the cliché. And more to the point, artists are relatively harmless, they need money, and it's possible to convince them that working as a consultant is itself a disruption of their *own* industry, the art industry. Art needs to disrupt itself as much as any other industry—how else is it going to survive?

2. The Incidental Person

Artists have been engaging with the aesthetics of industry since it first appeared, but artists working as freelance corporate consultants represent a newer and more specific kind of engagement. The clear historical precursors to the artist-in-consultance are the multiple, well-known art and technology collaborations institutionalized in and around California in the 1960s and '70s, notably LACMA's Art + Technology Lab (1967–71, resurrected in 2013); the Experiments in Art and Technology (1967–77); and the Ocean Earth Development Corporation (1980 until today). These initiatives were many faceted, but they typically resulted in a rather limited number of outcomes.

In one outcome, the artist-in-consultance becomes a noncritical functionary (what Max Kozloff called a "fledgling technocrat") engaged in the production of

novelty spectacle. Many have argued that a good example of this is the PepsiCola Pavilion at the 1970 Osaka Expo that Art + Technology collaborators built—a smoke-and-mirrors aestheticization of technology.

Another outcome is total antagonism. Take John Chamberlain's residency at the RAND Corporation, organized by LACMA in 1970. Disappointed at the RAND employees' "uptight," "very 1953" attitudes towards any experimentation in the workplace, Chamberlain became determined to provoke them. He began screening his semi-pornographic movie *The Secret Life of Hernando Cortez* (1969) during employee lunch hour. After being asked to stop, he distributed a memo to all RAND consultants demanding "ANSWERS. Not questions!" The memo garnered responses like "the answer is to terminate Chamberlain" and "GO TO HELL MISTER!!"

A third outcome is no outcome at all. For instance, Ocean Earth's decades of proposals and stalled collaborations have resulted in no concrete innovations. Cofounder Peter Fend would have it that his ideas are too threatening, rather than too implausible, to be adopted.

If I had to choose one of these outcomes, I like antagonism best—it hints at what actual "disruption" might look like and comes closest to dismantling the interests of both sides of the collaboration. However, it stops short of any real mutual engagement. During the RAND residency, Chamberlain and the employees essentially saw each other as ridiculous chumps rather than worthy adversaries.

Another artist-in-consultance model that, importantly, did not take place in California, managed to fluctuate between all three outcomes. As Claire Bishop wrote, this project seriously put forth the idea "that art can cause both business and art to re-evaluate their priorities," or precisely what I mean by dismantling.[5] This was the UK's Artist Placement Group, or APG, founded by the artists Barbara Steveni and John Latham in 1966 and active until 1989.

Calling itself an "artist consultancy," a "network consultancy," or a "research organization," APG arranged "placements" for artists within both public and private organizations for limited contract periods.[6] Including the British Steel Corporation, the Ocean Fleets shipping company, and the Department of the Environment, selected host organizations allowed the artist to essentially roam free within their confines according to agreed-upon terms of service (rendered in remarkably authentic bureaucratic language in a huge volume of correspondence mostly written by Steveni, which is a body of artwork in itself). The projects ranged from art education, on-site installations, public outreach, and creative uses of technology to, in some cases, direct critical reflection on company management and policy.

Artist-members of the Artist Placement Group in a public panel discussion with ministers from the German Government, Bonn, West Germany, 8 December 1977. Photo: Chris Hamblin.

Many of these collaborations dead-ended or became as superfluous or antagonistic as the above-mentioned projects. But a critical mass of them proved challenging, fruitful, and even tangibly beneficial to humans within and without the company. The success can be chalked up to the role, as carefully defined by APG, of the artist working in nonart contexts. Latham coined the term "Incidental Person" (IP) to account for this role.

The "incidental"—as opposed to instrumental—nature of the IP was due to her third-party status; to truly do the job, the IP had to be treated as any other professional in the organization, with the noted difference that the IP did *not* serve its interests. Latham wrote, "The work is fundamentally in the public interest and service, without being subordinated to corporate objectives as seen by the existing executives in corporation, government or department of government."[7]

In other words, neither the organization at hand, nor the state, nor the APG, was the client of the Incidental Person. As Latham put it: "the artist as Incidental Person [is] a

representative of the *whole* in the divided state State."[8] The IP was answerable only to the public good. I don't mean public as in the public sector (as distinguished from the private sector), or the public as a market-target group; and I don't mean good as in either charity or activism. I mean public good as Bishop meant it, as a way of providing third-party insight to reevaluate value systems in both business and art. Latham called this interest a "third ideological position":

> An Incidental Person takes the stand of a third ideological position which is off the plane of their obvious collision-areas. The function is more to watch the doings and listen to the noises, and to eliminate from the output the signs of a received idea as being of the work. In doing this he represents people who would not accept their premises, time-bases, ambitions, formulations as valid, and who will occupy the scene later.[9]

Former Microsoft CTO Nathan Myhrvold's cookbook, titled Modernist Cuisine, features dramatic photography with the recipes deconstructed by ingredients shown in stacks.

3. Vegan Burritos

Corporate philanthropy is an oblique kind of investment; the cost/benefit is not a straightforward calculation. For one, it's an investment in employee morale, which is an important part of affective management. It's also a marketing investment in public image (and the tax write-offs don't hurt either). But most importantly, philanthropy is an investment in the general project of neoliberalism: the premise that unrestrained private profit is good for society at large. A tech company running an urban garden or an artist-in-residence program is living proof that the government need not intervene in big business; otherwise, as the author of a 1979 book called *The New Corporate Philanthropy* forewarned: "the government will inevitably be brought in to address problems."[10] So corporate philanthropy is an integral facet of the logic that public and private interests can be made to align—it makes the Venn diagram of public/private benefit look like a single unified circle.

The hiring of artist-consultants is rarely framed as philanthropy, but rather as an investment: they're here to help us develop actual products and services; they're here to enrich life at the office; they're here to keep us on the cutting edge. Artists may do these things, but, like any type of philanthropy, they are also always an ideological investment in the ethics of the free market.

Many contemporary artists working with tech companies in the San Francisco Bay Area fulfill the same gratuitous roles as their 1970s predecessors. For example, the "novel-use-of-technology" model where artists become adorable functionaries dedicated to product development can be found at the software company Autodesk. After acquiring the how-to website Instructables in 2011, Autodesk launched an artist-in-residence program at its workshop on the San Francisco pier. Resident artists are brought in for a few months and given a moderate stipend and access to expensive software and machinery. "The logic was that by getting to know the people who are using technology in new, creative ways, Autodesk would be able to gather feedback to better respond to users."[11] Surely Autodesk does gather some ideas for how to make products more user-friendly by watching the artists play with the software, but the size of the artists' stipend, as compared to an engineer's salary, says everything about how much of a literal return on its investment Autodesk expects.

In another instance, Facebook employs what on the surface looks like a standard commissioning (patronage) strategy, inviting artists to create work for display on its Menlo Park campus—but the program is also framed as an artist residency, which is telling. This communicates that what's being paid for is not only the object produced, but rather the artist's whole brand identity and cultural caché, as well as their creative process. Facebook is commissioning the experience of having the artist on campus, wearing some hip hat and chatting with the technologists as they pass by the installation-in-progress on the way to the burrito stand.

This image is important. It's an image of knowledge transfer going down. Artists ostensibly have a special type of knowledge by dint of being artists. That's what makes them good predictors of the cultural tides in the first place. Preserving this assumption clearly behooves the artist—just as it behooves management consultants to

preserve the idea that management is a science they have perfected over the ages. But unlike the management consultant, whose knowledge may be sacred but is only intrinsically good insofar as it applies to profit, the artist's knowledge is intrinsically good because it supposedly *transcends* profit.

Through programs like these, artistic creativity is made indistinguishable from innovation. This reciprocally and tautologically makes sure that innovation remains an exalted process in its own right: innovation is an act of artistic creation, and is likewise therefore intrinsically good. Artist, management consultant: meet one another.

When art is placed on par with innovation, producing positive results just by being there, art is good in the same way that urban gardens are good, or Bringing Jobs to America is good, or a vegan burrito is good. Art is another aspect of lifestyle as a corporate-cultural value, and living proof that private profit as a form of governance is working out just fine.[12] So are there any contemporary artists-in-consultance who amount to more than vegan burritos?

Amalia Pica, Venn Diagrams (In the Spotlight), 2011. Flood lamp on tripods, motion sensor, gels, and graffiti on wall.

4. Splitting the Difference

> There is something silly about creating "categorically ambiguous" art and deliberately leaving the ambiguities unresolved. Is this in order to give aestheticians trouble? How sixties can you get. You become a more significant artist in proportion to how ambiguous a borderline case you invent (ho-hum).[13]

Unsurprisingly, the least burrito-like situations are where everyone stops pretending that the artist isn't working in some kind of service position, allowing the artist to go ahead and try to claim some kind of imaginative autonomy. For instance, calling oneself a designer rather than an artist helps lift the creativity-for-its-own-sake pretense that no self-respecting critical artist wants to bother with anymore, for the reasons mentioned above.[14] But many still call themselves artists. Critical artists-in-consultance are fully aware that they are working on behalf of a client, and they own it—by flipping their corporate service work into the content of artwork for consumption in the art sector, and then flipping that critical success back into content that can be sold or reformulated for a corporate buyer, and so on. Examples of artists and groups doing this abound: if you want a list, you'll find a lot on the 89+ roster. Rather than analyze specific examples, I'd like to propose some methods for evaluating this type of practice.

Much writing about contemporary artists working with/in the corporate sector gets stuck on the question of whether the artist can be both complicit and critical at the same time. In fact, this question has been tossed back and forth for at least the last fifty years in very similar terms. APG, for one, was constantly subject to accusations of total complicity—of ignoring class conflict, of naıveté, of "lack of political clarity." Gustav Metzger went so far as to accuse the group of a type of collusion that could only lead to right-wing politics. In hindsight a causal relationship is hard make out, but it's not laughable either; APG's activity in the UK dovetailed perfectly with the Thatcherist era. Many also argued the other side; Jack Burnham eye-rolled in the October 1971 issue of *Artforum*: "Whether out of political conviction or paranoia, elements of the art-world tend to see latent fascist aesthetics in any liason with giant industries; it is permissible to have your fabrication done by a local sheet-metal shop, but not by Hewlett-Packard."

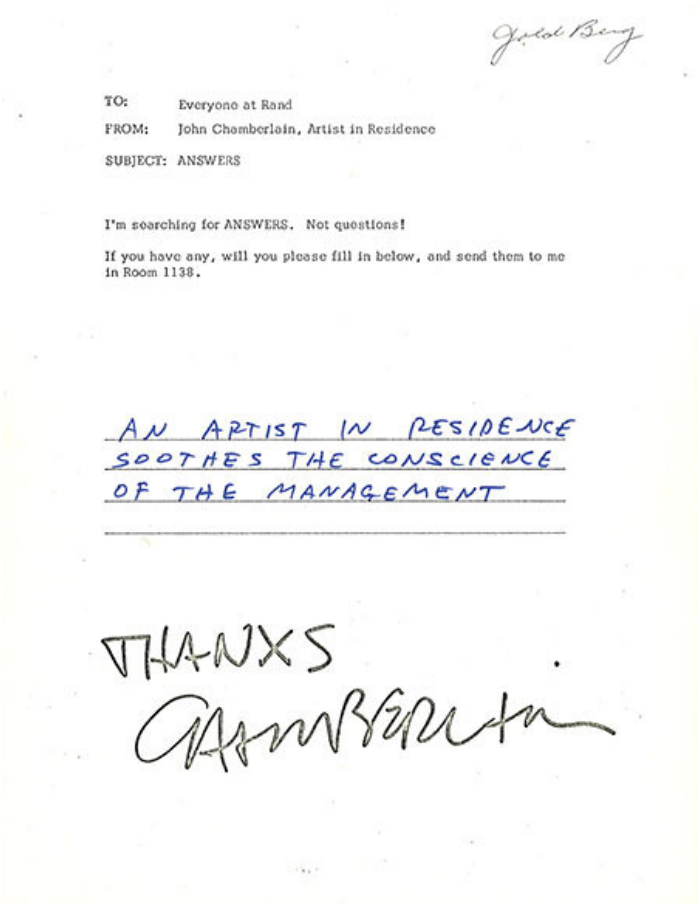
In the debate over complicity versus criticality, the Metzger and Burnham routes are less common today. Instead, people usually end up arguing for some version of "both" or "neither." This is partially for fear of sounding regressive (we're post-post now, there is no outside, etc.), and also because it's true: artists can have multiple clients, just like any consultant. In that sense, "complicit" is just a way of saying that an artist's clients are primarily corporate, while "critical" is a way of saying that they are primarily from the art sector. The artist-in-consultance is

always serving some combination of those two sectors. And here is the crux of the problem of the contemporary artist-in-consultance: it's not that corporate consulting is service oriented, but that art-world criticality is too.

In his dissertation on the topic of artists who consult, Carson Salter writes of the different reactions to one artwork from the perspectives of art and tech: "[The artist's] selection was read differently from various perspectives: conference attendees from the tech industry reportedly viewed the timeline as a celebration, where artist viewers saw it as an acerbic critique."[15] This is a perfect description of an artist trying to split the difference—art and tech become two sides of the same coin, both of which the artist is profiting from. At previous points in history, splitting the difference in this way might have been framed as a function of class conflict. "A Marxist ... might well argue that the artist's class position accords with that of the petty bourgeoisie, a group caught between two larger classes—the bourgeoisie and the proletariat—who oscillate in their loyalty but who generally serve the interests of the dominant class."[16] Trying to split the difference, according to this logic, always serves the interests of wealth.

In the best case, the artist-in-consultance who splits the difference can hope to be an "exorbitantly expensive and structurally disloyal hire," as Matthew Stewart described what management consultants have largely become—earning money from an organization to criticize that organization and earning whatever one earns in the art world for the exact same activity. In the worst case, the artist-in-consultance occupies, to appropriate a term from David Graeber, a bullshit job. While in Graeber's sense a bullshit job is a useless conglomeration of clerical, administrative, and service tasks that should probably have been made obsolete by technology but instead has been exacerbated by it, I mean it as an invented, superfluous occupation that, despite being "creative," serves primarily to distract the subject it employs from any imaginative reevaluation of the system that has created it. It distracts the subject because it pays a living wage. If the private sector didn't employ artists, or create crowd-funding platforms through which they could marginally employ each other, then there could conceivably develop a critical mass of unemployed thinkers who might demand that humans organize cultural support in a different way.

It is in any company's interest to invest what amounts to a pittance in its grand scheme to support a working artist's incisive critical projects—even outright damning ones. Ostensibly critical perspectives are typically exactly what the company is paying for. This mirrors the hiring of a management consultant, whose job it is to tell a company how naughty it's been, and simply by being there provides the remedy for the naughtiness. Both types of consultant are elite outsiders with special knowledge, a knowledge that must be perpetually kept under wraps in order to stay



TO: Everyone at Rand
FROM: John Chamberlain, Artist in Residence
SUBJECT: ANSWERS

I'm searching for ANSWERS. Not questions!

If you have any, will you please fill in below, and send them to me in Room 1138.

AN ARTIST IN RESIDENCE SOOTHES THE CONSCIENCE OF THE MANAGEMENT

THANXS

John Chamberlain's written report on his artistic residency at Rand Corporation, claims "An artist in residency soothes the conscience of the management."

special. Thus both types of consultant spend most of their time engaged in the act of justifying their presence, honing their critical tools but never actually using them to dismantle anything. Spending so much time honing your tools that you forget what you created them for—is this not the very definition of bureaucracy?

The artist-in-consultance serves corporate interests; this is not up for debate. Artists have found out how to likewise make consulting serve the interests of the art economy, and their own personal interests. The interest that is left unaccounted for here is that of John Latham's abstract third client, the "third ideological position" that the Incidental Person was supposed to serve. I would propose bringing this third client back into the Venn diagram when evaluating the work of artists-in-consultance. That circle is very different today than it was in the Seventies, but it still exists—all it really needs to exist is an artist working in it. Rather than one of those apparently outdated terms like "the public," I'll just go for it and call this third circle: our dying planet. That is, all the humans and nonhumans at risk of extinction.

Preserving the integrity of all three circles as separate

entities is important because it allows the existence of cases when private interest and other interests simply *do not align*. The goal of the artist-in-consultance should not be to force the interests of business, art, and the planet to overlap, but to preserve their misalignment at all costs.

X

Elvia Wilk is a writer and editor based in Berlin. With a focus on art and technology, she contributes to publications including *frieze d/e*, *The Architectural Review*, *Art in America*, *Flash Art*, *Texte zur Kunst*, *Sleek*, and *Dazed*. She also writes fiction and poetry. In 2012 she was one of the founding editors of *uncube* and stayed on as editor-at-large from March 2015 until April 2016.

1
"Joseph Beuys Titles for Sculptures," in David Levi Strauss, *Between Dog & Wolf*: *Essays on Art and Politics in the Twilight of the Millennium* (Brooklyn: Autonomedia, 1999), 141.

2
Matthew Stewart, *The Management Myth: Why the Experts Keep Getting it Wrong* (New York: W.W. Norton, 2009).

3
Matthew Stewart, "The Management Myth," *The Atlantic*, June 2006 http://www.theatlantic.com/magazine/archive/2006/06/the-management-myth/304883/

4
Far from becoming obsolete or collapsing, management consultancy is diversifying and buying itself up. For example, longstanding management firms (McKinsey and the like) are supplementing their services by hiring entire creative groups as their own in-house consultants. Interview with Thomas Ulrik Madsen, May 16, 2016.

5
Claire Bishop, *Artificial Hells: Participatory Art and the Politics of Spectatorship* (Brooklyn: Verso, 2012), 177.

6
Until the mid-1970s APG worked primarily with private companies but eventually shifted towards working with governmental organizations, reportedly because long-term contracts with corporations were hard to obtain. It is notable that APG was initially formed as a charity and only later incorporated into a limited company and eventually a multinational corporation. The shift to Ltd. status was partially due to the fact that it allowed artists to be paid a salary on par with other professionals.

7
John Latham, "The Incidental Person Approach to Government," presentation at Joseph Beuys's *Free International University* , documenta 6, Kassel, 1977.

8
As quoted in John Walker, *John Latham: The Incidental Person—His Art and Ideas* (London: Middlesex University Press: 1994), 100.

9
John Latham, "Artist: John Latham Placement: Scottish Office (Edinburgh)," *Studio International*, March–April 1976: 169–70.

10
Full quote: "It is also important to maintain and enhance in this country a pluralistic approach to our social needs, or the government will inevitably be brought in to address problems if other initiatives are not forthcoming. It isn't enough to decry the expansion of governmental activity into every nook and cranny of public and private life. Surely the business community with its enormous intellectual, financial, and other resources can develop alternatives in the area of social problem-solving." Frank Koch, *The New Corporate Philanthropy: How Society and Business Can Profit* (New York: Springer, 1979), 4.

11
Kelsey Campbell-Dollaghan, "How Startup Culture is Transforming Philanthropy," *Fast Company* , April 11, 2013 http://www.fastcodesign.com/1672352/how-startup-culture-is-transforming-philanthropy

12
I'm focusing on artists engaged in the private sector, though plenty work for governments and philanthropic organizations.

13
The definition of "ambiguity" from a dictionary written in 1973 by the members of the Art & Language group. Art & Language, "15: Ambiguity," *Blurting in A&L Online* (Karlsruhe: ZKM, 2002) http://hosting.zkm.de/blurting/ . (Thanks to Carson Salter for unearthing this.)

14
In particular, "speculative design" increasingly provides a midway point between art and industry. According to California-based artist, designer, curator, and technologist Barry Threw, "More tech companies will be able to understand speculative design as a way to incorporate lateral and theoretical thinking, and this will open up a new role for artists." Interview with author, May 24, 2016.

15
Carson Salter, *Ambi_ Enterprise artworks, the artist-consultant, and contemporary attitudes of ambivalence* , Master of Science at the Massachusetts Institute of Technology, June 2013, 68.

16
Walker, *John Latham*, 100-101.

One might query any contemporary artist and, as a kind of litmus test, ask the following series of questions: Do you think of yourself as primarily working "on" the digital or primarily "within" it? Is the computer incidental to your work, a tool like any other? Or is the computer at the heart of what you do? Shall art orient itself toward the digital? Or shall art merely live inside the digital, while concerning itself with other topics entirely?

Digital aesthetics can refer to the "medium" of the digital, that is, all the tools and technologies that populate contemporary life. At the same time, digital aesthetics can refer to context, that is, a "digital context" or a "net condition"—the latter being the title of an influential 1999 net art exhibition at the ZKM in Karlsruhe. Artists have their own particular ideas about digital aesthetics, of course, as do computer scientists. Sometimes these ideas overlap and sometimes they don't. Can digitality be beautiful? How hopeless a question to pursue: it depends on so many complicated things, not least of them the definitions of digitality and beauty.

Alexander R. Galloway

Jodi's Infrastructure

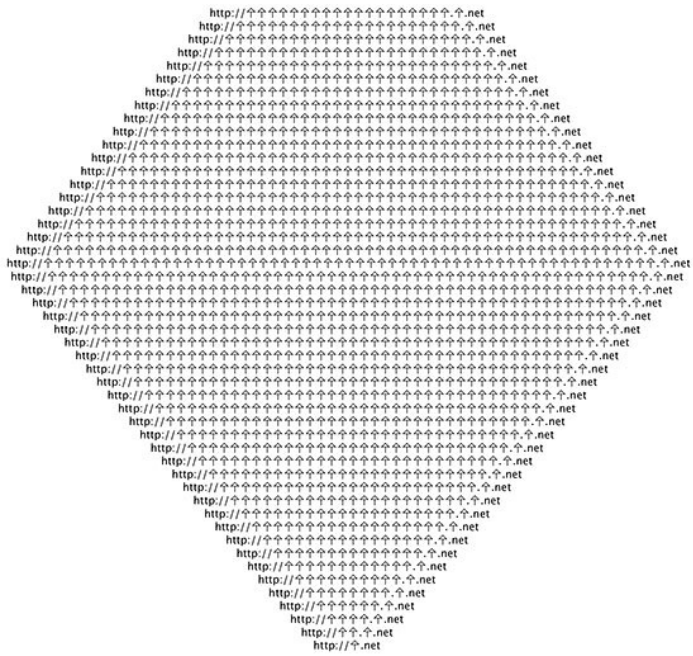
Jodi, IDN (a screenshot of the work), 2015. Copyright: Jodi.org

Technologists tend to wrestle with similar issues. Some programmers or engineers think of the machine as a tool to be used in pursuit of some larger design strategy. Thus there are many workaday technologists for whom digitality is a "context" or "condition," with all of its attendant issues, from proletarianization and exploitation (be it unpaid overtime in Silicon Valley or harsh working conditions at Foxconn) to new forms of empowerment via social networking and communication in the public sphere. Still, when technologists reflect on themselves, when they narrate their own project, they tend to favor medium over context. I'm thinking of a text like *The Art of Computer Programming*, Donald Knuth's monumental treatise on computer science. Here "art" is an entirely self-referential activity, and beauty is defined through the virtues of functionality, elegance, and simplicity. Context still matters, of course, but code derives its beauty, its very identity, from an analysis of function and its accurate formalization in logical and mathematical structures. (G. H. Hardy's classic hymn to pure mathematics, *A Mathematician's Apology*, is the literary obverse to Knuth, but it promulgates a similar set of virtues.)

Two basic activities emerge. A person may work "on" the digital or "within" it. In the former, one's attention is directed from the outside in, taking the medium itself as its object, while in the latter one takes the perspective of the medium itself, radiating attention outward to other contexts and environments. To generalize from this, the first position (working "on") is labeled modern or, when applied to art and aesthetics, modernist. And the latter position (working "within") is labeled non-modern, be it premodern, postmodern, or some other alternative.

In the modern "on" mode, infrastructure is everything. Content dissolves into context, and context itself becomes content. Hence the great mantra of modernity is "there is no content"—or, as Marshall McLuhan famously put it, "the medium is the message"—since all content is overwhelmed by context. By contrast, in the non-modern, premodern, or postmodern mode of working "within," content is what it is, no more and no less. Here content provides its own context, and the environment grows in accordance with the emergent emanations of the inside. No larger transcendental category arrives like a conquistador to command and encompass it from outside. For the non-modern, the message is the message. And any other loftiness—from heaven above to down below—will always be legible right there within it. Indeed, only a modern would ever invent the word "content" in the first place.

Are mathematicians modernists? Perhaps they are, given the way in which math tends to return continuously to its own formal construction. We know that Plato, that great devotee of math, was the first "modern" in this sense, as anachronistic as that may sound. But what about computer art? Is it modernist as well? Here the answer is not so clear, with modernist tendencies evident in certain



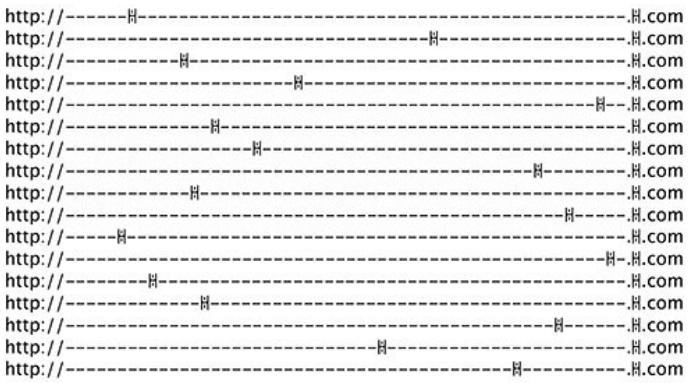
Jodi, IDN (a screenshot of the work), 2015. Copyright: Jodi.org

micro-movements (late 1990s net art for instance) while less evident in others.

Where does the artist duo Jodi (or Jodi.org) stand in all of this? The answer seems clear enough. They are moderns through and through. There is no Jodi work that is not oriented toward the digital as its object and material. There is no Jodi work that is not on and about the material. They display in abundance that great modernist virtue of self-referentiality. The material of their work is quite simply the material itself.

Still, digitality in art today is, for the most part, not modernist. In contemporary art, digitality typically doesn't signal medium specificity or a reflection on art's conditions of possibility. Digitality today is usually understood in terms of the flexibility or inconstancy of the substrate (the so-called crisis of indexicality), or alternately in terms of network phenomena like circulation and dispersal (following the interesting work of David Joselit or Seth Price), or simply as a form of ambient environment, feeding and inflecting the kind of work being made.

Jodi are thus stubbornly out of step with the dominant rhythms of contemporary art. Less obsessed with the cultural or social effects of new media, Jodi orient themselves toward the specificities of hardware and software. The resulting aesthetic is, in this way, not entirely specified by the artists' subjective impulses. Instead, the texture of code and computation takes over, and computing itself—its strange logic, its grammar and structure, and often its shape and color—produces the aesthetic.



Jodi, IDN (a screenshot of the work), 2015. Copyright: Jodi.org

Jodi's *IDN* is chiefly concerned with the infrastructure of the Web. The work focuses on two technologies, the Internationalized Domain Name (IDN) implementation (which lends its name to Jodi's project) and Unicode, the universal character encoding standard. Jodi have made works about domain names in the past. "Wrong Browser" is a series of web browsers with names like "CO.JP" alluding to the top-level domains used for countries around the world; each browser renders a different series of abstract compositions, while frustrating the user's sense of interactivity. A different project, "LVY," is a group of three dubious domain names (LinhedIn.com, Vodacone.com, YouTuhb.com) that guide the user to an enigmatic, shivering animation. Or, in an early work labeled simply *map* (map.jodi.org), the duo provided a low-tech mapping of the landscape of domains and sites that most interested them at the time, sites like re-move.org or irational.org.

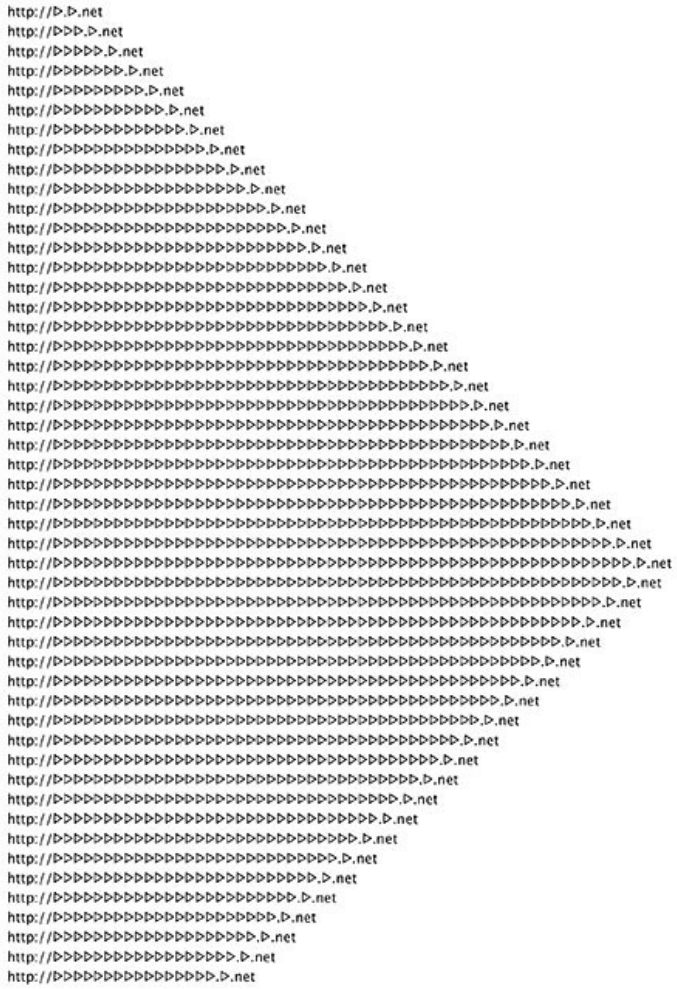
As for Unicode, the character forms and glyphs of computer alphabets have long been exploited for their graphical qualities. ASCII art arranges the letters and punctuation of the ASCII character set into a crude palette of tones from light to dark, drawing pictures from the tones. And games like *Dwarf Fortress* use exotic glyphs to represent characters and objects. A system of "expanded punctuation" has also long been used to convey mood in text, both online and off (via the typewriter), using simple emoticons like ;) and more complex faces and pictures like or . After the gradual adoption of Unicode, applications and operating systems could render a vast array of graphical signs, both for all the world's alphabets but also a variety of icons and emoji. Gamers quickly learned simple hacks for usernames and text chatting, adding a bit of flare with a name like (instead of Kitten). Artists Jörg Piringer and Nick Montfort have both made work that plumbs the length and breadth of various encoding schemes, from Unicode and ASCII to the character-encoding system used on the Commodore 64. The newly developed programming language Swift has also added Unicode support, not simply in what the language can compute but in the very text of the source code itself. In Swift the number 3.141592 may be assigned to a variable named rather than pi, a small but significant distinction. Indeed it may be assigned to an emoji, a kanji character, or anything else available in Unicode. Swift's support for Unicode has facilitated new kinds of source-code chicanery beyond anything seen in the most notorious Perl poetry of yore.

Infrastructure changes slowly. Even as word processors and other applications began to support Unicode, many of the internet's internal technologies were late adopters. The IDN standard, only in use since 2010, was designed to allow Unicode characters within domain names, both top-level suffixes and server names. Thus, after the implementation of IDN, users may surf to pages with addresses ending in instead of .ru (Russia) or instead of .cn (China). Likewise each server and hostname may be rendered in languages that don't use the Latin alphabet, such as Arabic or Greek. Still, the apparent universality of IDN is something of an illusion. Certain characters are prohibited outright to help avoid phishing attacks using similar looking glyphs. And, in fact, each Unicode domain is transcoded into an ASCII string behind the scenes. ASCII's much smaller character set, consisting of the letters A–Z, the numerical digits 0–9, plus a few forms of simple punctuation, is considered to be simpler and more difficult to spoof. And, given that the Web was built on ASCII, it is easier to add Unicode support as a special form of ASCII encoding than change the Web's entire naming technology. For instance, a browser aimed at a Unicode address like ".net" will first translate the address to the corresponding ASCII version, in this case "xn--417a.net," and then fetch that address instead. In other words, even if a user sees Chinese or Russian characters on the screen, it's still ASCII underneath.

Jodi's *IDN* is a series of websites using single Unicode glyphs as domain names, all under the .net or .com top-level domains. Besides the primary glyph domains, additional websites are referenced via internal links. For example, .com refreshes to .com which refreshes back to .com in a continuous loop. A few of the domains are as yet still empty, and a few others proffer short messages or other information. .com and 0.com both simply repeat the project's opening salutation, that "Apache is functioning normally."

The majority of pages produce graphical compositions that animate slowly in the browser via the HTTP "refresh" command. Some of them, like .com, animate solely in the address bar of the browser. Others, like .com or .net, produce large textual patterns that mimic or otherwise reference the shape of the glyph itself. (Here it's useful to compare HTML source to screen output, since the two often have different text justification or line wrapping; Jodi has explored this interesting inconsistency since their earliest work on the Web.)

At first glance, Jodi's *IDN* seems to resemble ASCII art or concrete poetry. I'm reminded of Carl Andre's typewriter



Jodi, IDN (a screenshot of the work), 2015. Copyright: Jodi.org

poems where text appears on the page as geometric shapes. But despite this superficial similarity, *IDN* is in fact doing something a bit different. Jodi have woven their geometric shapes from out of a complicated hypertextual structure. Less concrete poetry, this is a kind of infrastructure poetry. The project .com, for instance, requires a whole series of elaborate if not absurd host names. And to a certain extent, the work itself is nothing but a series of such names. When all the names are combined in a vertical stack, they create a patterned field of text. (One can only assume that Jodi had to write a series of scripts to automatically generate these many dozens of web pages, a tedious task if attempted by hand.)

Where does the work reside? Two places. First, Jodi seem interested in isolating certain parts of the screen, even certain parts of the browser. The browser's address bar, for instance, is treated here as a kind of miniature canvas for slow-motion animation. Like the structural films of Tony Conrad, Jodi create each animation frame by frame from discontinuous elements. A glyph becomes a single frame in a slow-motion film. When the glyphs combine in series, they give the illusion of movement. Like a form of primitive cinema, entire animations appear solely inside the address bar.

But the work resides in a second place as well. The projects in *IDN* are assembled not so much from discrete web pages as from the negative space existing between such pages. Jodi are interested in HTML, to be sure, but here they also display a penchant for the very standards and protocols of the web itself—how pages are assigned addresses and how servers transfer pages to clients. The "infrastructure" in this infrastructure poetry is thus the agglomeration of server software (Apache), addressing technologies (IDN and DNS), transfer protocols (HTTP), and finally, web browsers and the HTML they are designed to display.

Unicode is big. But the web is infinitely big. Like a fractal with its endless regress of complexity, a new web page can always be inserted between two existing ones, creating an infinitely large system. Unicode, by contrast, is a technology of universality, not infinity. The goal of Unicode is to facilitate all the world's writing systems, to arrange and classify them, but then to stop. Oh, how small is this vast Unicode when compared to infinity!

In the end, I suspect that Jodi are more interested in the web than Unicode, more interested in the structure of infinity than the classification of universality. The glyphs are adjunct here, a needed ingredient perhaps, but only necessary to facilitate animation and pattern. The true subject of the work is infrastructure—the cables and lines, the standards and protocols, all the industrial transfer technologies that reside in the space beyond the screen.

Net art was always something of an orphan, but a particularly interesting orphan. Shunned by the art world during its formative years, net art never quite fit into the master narratives of art, or technology for that matter. Jodi's infrastructural modernism, if we can call it that, is interesting because it suspends the distinction between art and technology without making one subservient to the other. Jodi are artists who insist on the importance of seemingly uninteresting technical minutiae, such as character-encoding schemes and other tedious matters. And they are technologists who insist that the beauty of code comes not from function and elegance but from a different set of virtues—dysfunction and inelegance to be sure, but also confusion and excitement, violence and energy. The result is not so much a mechanization of art, nor that clumsy concept "the art of the machine," but a much more simple and mundane reality: the computer as medium.

X

A shorter version of this article was first published by West

Den Haag.

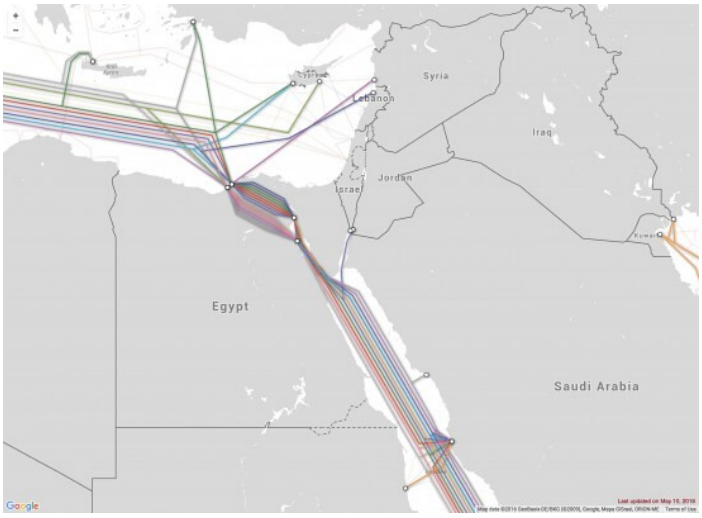
Alexander R. Galloway is a writer and computer programer working on issues in philosophy, technology, and theories of mediation. Professor of Media, Culture, and Communication at New York University, he is author of several books on digital media and critical theory, including *The Interface Effect* (Polity, 2012). His collaboration with Eugene Thacker and McKenzie Wark, *Excommunication: Three Inquiries in Media and Mediation*, has recently been published by the University of Chicago Press. With Jason E. Smith, Galloway co-translated the Tiqqun book *Introduction to Civil War* (Semiotext[e], 2010). For ten years he worked with RSG on *Carnivore, Kriegspiel,* and other software projects.

Zach Blas

Contra-Internet

1. Killing the Internet

On January 28, 2011, only a few days after protests had broken out in Egypt demanding the overthrow of then president Hosni Mubarak, the Egyptian government terminated national access to the internet. This state-sponsored shutdown became known as flipping the internet's "kill switch." The intention behind killing the internet in Egypt was to block protestors from coordinating with one another, and prevent the dissemination of any media about the uprising, especially to those outside of the country. Peculiarly, it is a death that only lasted five days, as internet access was soon reinstated. More precisely, the internet kill switch unfolded as a series of political demands and technical operations. Egyptian internet service providers, such as Telecom Egypt, Raya, and Link Egypt, were ordered to cancel their routing services, which had the effect of stymying internet connectivity through these major companies. Fiber-optic cables were another target, as the small number of such cables linking Egypt to international internet traffic are owned by the Egyptian government. As a result, 88 percent of internet connectivity in Egypt was suspended in a matter of hours. Notably, the only ISP that remained active during this period was the Noor Data Network, which is used by the Egyptian Stock Exchange.



Fiber-optic cables connected to Egypt are shown here in a Submarine Cable Map.

What does it mean to kill the internet?[1] If one attempted to physically locate where the internet was killed in Egypt, one might go to the Telecom Egypt Building at 26 Ramses Street in Cairo, just four kilometers from Tahrir Square, which is the major fiber-optic connection point going into and out of Egypt. But can technical infrastructure be killed? Or, can technical infrastructure die a political death,

like the more than eight hundred people killed during the uprising? If the internet did die, then it was also resurrected, while the protestors remain dead. Is the internet undead then, like a zombie? To understand withdrawing access to the internet as killing emphasizes a potentially grievable loss or a violation of international human rights laws, as the United Nations claims.[2] This is confusing though. If the internet was killed by the Egyptian government, then it must be assumed that the internet is on the side of the revolutionaries; however, internet infrastructure is fully controlled by the state. If the internet was, in fact, killed in Egypt, then it was both a suicide and a murder. Put simply, it was an act believed to curtail revolution, but the Egyptian government failed to see the potential for political struggle after the internet's death—as though the desire for political change can only persist within telecommunications itself.

The events in Egypt are not isolated. A whole minor history of the internet is waiting to be told, not based on its core contribution to the project of globalization but rather on political blockage and impasse; not a history of total flatness, global villages, and linkability but of sharp breaks, dead ends, and back doors: a history of when the internet ceases to exist. During the 2007 Saffron Revolution in Myanmar, internet access was blocked throughout the country. In 2014, in the aftermath of the Gezi protests in Istanbul, Turkish prime minister Recep Tayyip Erdoğan banned access to Twitter. Since 2014, Iraq has frequently imposed internet blackouts, as has Nepal since as early as 2005. In North Korea, citizens have little-to-no access to the internet, instead using a domestic-only network called Kwangmyong. Websites are regularly filtered and censored not only in China—through what is nicknamed The Great Firewall of China—but also in many European countries, like the United Kingdom. In the United States the internet has never been shut down, but it has become a refined crystallization and extension of an extremist surveillance state.

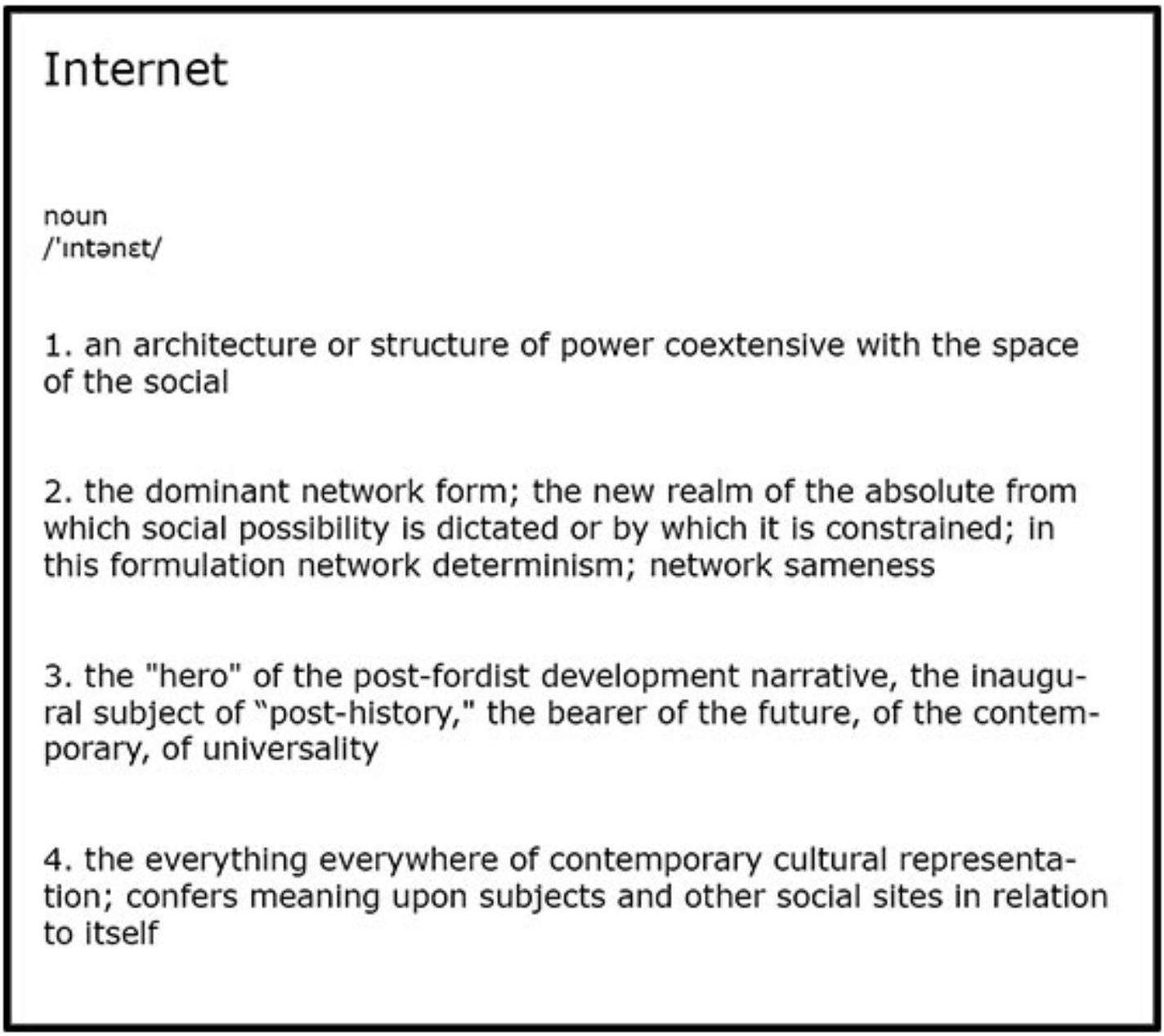
In 1994, then US vice president Al Gore prophesized that a coming Global Information Infrastructure would spread participatory democracy worldwide. Consider where we are now: in November 2015, at a campaign rally in South Carolina, US Republican presidential candidate Donald Trump called for "closing that internet up" to curtail ISIS's internet recruitment efforts.[3] Trump's demand for an internet shutdown confirms that the killing of the internet is not reserved for countries deemed totalitarian, but is also conducive to Western democracy. In the US, the death of the internet is the refashioning of network infrastructure into a smooth site of capital accumulation and governmental control. Masses camp on city sidewalks—in front of Apple stores and Walmarts alike—in manic anticipation of the newest networked commodities, whose shiny black surfaces belie algorithmic subterfuge by states. Online, Trump's dreaded freedom of speech is morally policed by a sprawling content management workforce, operating under undisclosed guidelines, whose blocking of uploads reminds us that YouTube and Facebook were never agoras for freedom of expression to begin with. At the helm, as it were, is the internet user, a biopolitical subject engineered by corporations and possessed of a dazed and addictive subjectivity that hungers for feeds that never stop, clickbait that always demands another click, and content generators that multiply browsing tabs until a computer crashes.

What is the internet's historical present? To answer this question, we must first make a basic observation: contrary to media theorist Marshall McLuhan's insistence that media is an extension of man, the internet—a paradigmatic example of media—has become an extension of control.

2. Disappearing the Internet

At the World Economic Forum in 2015, Google chairman and ex-CEO Eric Schmidt promised that "the Internet will disappear" into our environments.[4] What is the difference between killing and disappearing the internet? Schmidt elaborates: "there will be so many IP addresses … so many devices, sensors, things that you are wearing, things that you are interacting with, that you won't even sense it. It will be part of your presence all the time."[5] Here disappearance is the opposite of an internet shutdown. It is the elimination of the possibility of killing, a guarantee of total integration, seamlessness, and dispersion. To disappear the internet is to dissolve its infrastructures into the very materialities that compose contemporary life and the world. Internet = a new chemical element. An eye that is always GoogleGlass. A surface whose interactivity never falters. A transparent city where your personal data is your gateway to culture and entertainment. A cloud to aid a body that does not stop producing data, except perhaps in death. Rest assured, the disappearance of the internet is the emergence of the internet of things, a technological promise to reengineer all objects and beings as ontologically networkable.

Of course, this also represents the exacerbation of our neoliberal condition. Governance is now a rhizome gone bad, as networks that are assumed to be immortal unleash a torrent of rapid flows aimed at protocological control and management, in which all life is networked, administrated, and programmable. The internet disappears into the corporate stranglehold of Silicon Valley, only to become the latest tool for incessant global surveillance, as evidenced by the NSA in the US and GCHQ in the UK. And just as the internet disappears into floating data centers off the coast of California, it reappears as e-waste from the West dumped throughout the Global South. The disappearing act that Schmidt predicts for the internet remains purely technical and misses the point that the internet is also disappearing into us by becoming a mode of subjectivation, a set of feelings, a sense of longing, a human condition, a metanarrative.



Out of this vortex of killings and disappearances emerges a definition of the internet that goes far beyond its technical infrastructure: the internet as a totalized sociocultural condition. Like capitalism, the internet has come to exist as a totality, with no outside, no alternative, no ending. This provokes a question that Julian Assange once asked: Is the future of the internet also the future of the world? Once the internet disappears into the world—and the world becomes a global image of the internet—does this mean that in order to undo such a teleological trajectory, it is necessary to think beyond the world? If Eric Schmidt can think beyond the internet, why can't we?

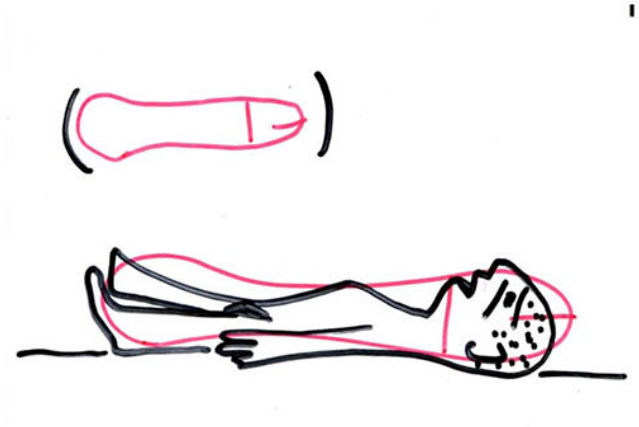
This is the task I present: to discursively and practically transform "the internet" in order to locate the potentialities of a militant alternative or outside to the totality the internet has become. I turn to my mentors in minoritarian politics, particularly queers and feminists, as struggles for alternatives to domination and control are of the utmost importance.

3. Postcapitalist Politics

In 1996, the theorist(s) J. K. Gibson-Graham published the book *The End of Capitalism (As We Knew It)*, introducing a particularly feminist take on postcapitalist politics. In part, Gibson-Graham aim their critique at Marxist philosophers—mostly men—who argue that capitalism has no outside. According to Gibson-Graham, this argument has the curious effect of nullifying any

anticapitalist project—including the professed project of Marxism! Against such a monolithic view, Gibson-Graham expose thriving economic alternatives that exist within the supposedly totalizing frame of capitalism. For Gibson-Graham, "postcapitalist" does not refer to a time after the totalization of capitalism, but rather economic alternatives at play within capitalism itself. They coin words like "capitalocentric," a term that critiques the Left for not being able to think outside or beyond capitalism.[6] By shifting from thinking totality to thinking possibility, Gibson-Graham perform a much-needed intervention into anticapitalist politics.

What might become thinkable if we engage the internet through postcapitalist politics? What becomes possible when Gibson-Graham's critique is aimed at the internet as a totalized and hegemonic form of contemporary life? Certainly a different definition of "post-internet" emerges, referring now to network alternatives, like mesh networks, and cryptographic practices that have taken root within the supposedly totalized frame of the internet. A new post-internet vocabulary follows, starting with the word "internetocentric"—the inability to think beyond or outside of the internet. Tested in a sentence: "Zach struggles with being internetocentric, even though he longs for a political horizon beyond the internet."



A didlotectonics diagram from Paul Preciado's book Manifesto Contrasexual (Madrid: Anagrama, 2011).

4. Contrasexuality

In his *Manifesto Contrasexual* (2001), Paul Preciado advances the queer concept of "contrasexuality." Described as a refusal of sexual norms, contrasexuality prohibits any articulation of sexuality as naturalized. Indeed, speaking the word forces one to say "against sexuality"—that is, against an understanding of sexuality as constituted by dominating and hegemonic powers. The body and sexuality are sites of struggle for power and politics. To enact contrasexuality, then, is to performatively and perversely produce contra-pleasures in the body, which in turn evokes a utopian horizon of political transformation. Contrasexuality is at once a refusal, and the constitution of an alternative. How, then, might we practice "contra-internet" politics?

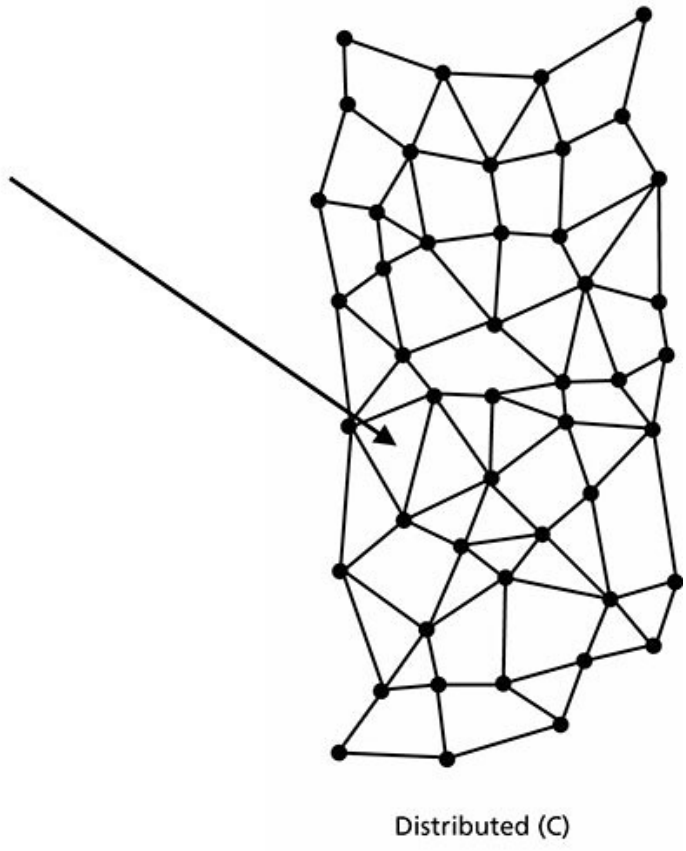
Preciado explains that contrasexuality can be practiced through "dildotectonics," the "experimental contra-science" of dildos.[7] The dildo is the chosen contrasexual form because it is both external to the body and undoes the assumption that the body is a totalized heterosexual unit. In fact, Preciado claims that the body can be mapped out entirely as a dildo, which suggests that it can be transformed into pure contrasexuality. A body as dildo is sexually unnaturalized, reconfigured, made into a transgressive prosthesis. Significantly, the dildo does not reduce the body to a phallus, as it is not an emblem of patriarchy for Preciado. This is why a penis can be considered a meat dildo, but a dildo can never be a plastic penis. As evident in Preciado's drawings, the contrasexual dildo is a diagrammatic form that, when experimented with, reveals the potentialities of sexuality beyond the heteronormative and the phallocentric. Preciado goes so far as to generously offer a set of "dildotopia" exercises, such as drawing a dildo onto one's arm and masturbating it like one is playing the violin.

What are the dildotectonics of the internet? Put differently, if the dildo is a form adequate to exposing the norms and constructions of sexuality, then what is the form adequate to revealing the internet as totality? An initial yet insufficient response might be: the network. The internet may be comprised of networks, but a network is not necessarily the internet. However, the network links life to the dominant forms of governance and control today. So just as the dildo's form is external to the body, perhaps a contra-internet form must be external to the internet—must be something other than a network. What might be outside networks?

5. Paranodes

In "The Outside of Networks as a Method for Acting in the World," a chapter from his 2013 book *Off the Network*, Ulises Ali Mejias introduces the "paranode," a term that conceptualizes that which is other to—or an alternative to—a network configuration. The paranode is an antidote to "nodocentrism," which, argues Mejias, is the dominant model for organizing and assembling the social. Derived from neuroscience, the paranode is the space that networks leave out, the negative space of networks, the noise between nodes and edges. It is the space that "lies beyond the topological and conceptual limits of the node."[8]

Consider this seminal network diagram by engineer Paul Baran. The diagram is of a distributed network, which is commonly used to explain the functionality of the internet,



Paul Baran's 1964 distributed network diagram, with a paranode identified.

where any node can connect to any other node. The paranodal space is indicated. While this space is bound by nodes and edges, it is not constituted by that architecture. Within this seemingly empty white space, we must look much closer. When we do, we see that the paranode positively demarcates the before, after, and beyond of networks. Since its form is multitudinous, it might best be thought of as a collection of dildos for the internet, rather than a single dildo.

In a recent conversation with David M. Berry, Alexander R. Galloway combatted the crushing totality of nodocentric thought that obscures the paranodal:

> Today we are trapped in a sort of "networked" or "reticular" pessimism … *reticular pessimism* claims, in essence, that there is no escape from the fetters of the network. There is no way to think in, through, or beyond networks except in terms of networks themselves … We have a new meta-narrative to guide us … By offering no alternative to the network form, reticular pessimism is deeply cynical because it forecloses any kind of utopian thinking that might entail an alternative to our many pervasive and invasive networks.[9]

Galloway's reticular pessimism destabilizes the nodes and edges of the network form. Cracks and fissures appear out of what were once straight lines and solid dots. The outside's force is felt and an opening to the paranode appears. It is the moving toward such an opening that marks the beginning of all contra-internet politics.

6. Antiweb

I would like to end with a different kind of example of the internet ceasing to exist. During the 2014 pro-democracy demonstrations in Hong Kong, protestors, concerned that the Chinese government might surveil or shut down the internet, sought an alternative networking platform. They used FireChat, a mesh-networking device for smartphones that enables autonomous networking without connecting to mobile phones or Wi-Fi networks. Protestors thus digitally networked without connecting to the internet. Although FireChat does not break from the network form into the space of the paranodal, it does generate antiwebs, or networking alternatives to the undead World Wide Web. Reassuringly, such activity is not isolated: mesh networking has been used in New York during Occupy, as well as in Detroit, Taiwan, and Iraq. These events illustrate an emergent network militancy whose goal is to expose the inadequacies of the internet as a political horizon and also offer a utopian glimmer of another kind of network. It could be said that these practices present to us, quite stunningly, the end of the internet (as we knew it).

But the internet's end is also the paranode's beginning. The paranode is the horizon, the site of futurity that contra-internet practices move toward. As contra-infrastructure and theoretical model, the paranode proposes two militancies: the practical search for antiwebs, which is not a killing or disappearing but a commons to come; and the intellectual task of making thinkable that which is not only outside the internet but also beyond the network form itself.

As the Zapatistas might say, let us approach the internet at the speed of dreams.

X

This essay was originally commissioned by Rhizome as a lecture performance that premiered in April 2016 at Whitechapel Gallery in London, as part of the exhibition "Electronic Superhighway." An earlier companion to this essay, entitled "Contra-Internet Aesthetics," was featured in the book You are Here: Art After the Internet *, edited by Omar Kholeif and published by Cornerhouse in 2013.*

Zach Blas is an artist and writer whose practice engages technics and minoritarian politics. Currently, he is a Lecturer in the Department of Visual Cultures at Goldsmiths, University of London. Blas has exhibited and lectured internationally, recently at Whitechapel Gallery, London; ZKM Center for Art and Media, Karlsruhe; Institute of Contemporary Arts, London; e-flux, New York; Institute of Modern Art, Brisbane; New Museum, New York; Museo Universitario Arte Contemporáneo, Mexico City; and transmediale, Berlin. Residencies include Eyebeam in New York, The Moving Museum Istanbul, The Banff Centre, and the Delfina Foundation in London.

1
Hito Steyerl explored the death of the internet in “Too Much World: Is the Internet Dead?,” *e-flux journal* no. 49 (November 2013). Steyerl’s essay begins: “Is the internet dead? This is not a metaphorical question. It does not suggest that the internet is dysfunctional, useless or out of fashion. It asks what happened to the internet after it stopped being a possibility. The question is very literally whether it is dead, how it died and whether anyone killed it.” https://pdf.e-flux-systems.com/www.e-flux.com/journal/too-much-world-is-the-internet-dead/ .

2
See “Joint Declaration on Freedom of Expression and responses to conflict situations,” UN Office of the High Commissioner for Human Rights, 2015 http://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=15921&LangID=E .

3
Sam Frizell, “Donald Trump Wants to Close Off Parts of the Internet,” *Time*, December 15, 2015 http://time.com/4150891/republican-debate-donald-trump-internet/ .

4
Dave Smith, “GOOGLE CHAIRMAN: ‘The Internet Will Disappear,’” *Business Insider*, January 25, 2015 http://uk.businessinsider.com/google-chief-eric-schmidt-the-internet-will-disappear-2015-1?r=US&IR=T .

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Ibid.

6
J. K. Gibson-Graham, *The End of Capitalism (As We Knew It)* (Minneapolis: University of Minnesota Press, 2006), 6.

7
Beatriz Preciado, *Manifesto contrasexual* (Madrid: Anagrama, 2011).

8
Ulises Ali Mejias, *Off the Network: Distrupting the Digital* World (Minneapolis: University of Minnesota Press, 2013), 153.

9
David M. Berry and Alexander R. Galloway, “A Network is a Network is a Network: Reflections on the Computational and the Societies of Control,” *Theory, Culture & Society* , 2015: 7.

Marina Simakova

No Man's Space: On Russian Cosmism

We have recently seen a growing interest in Russian cosmism as a subject of theoretical polemics and a conceptual frame for several major art projects. Cosmism's broad presence in the international intellectual arena was long impossible for several reasons. Despite the ambitiousness of his ideas (foremost among them, the persistent desire to challenge death itself), Nikolai Fedorov, Russian cosmism's central philosopher, was a private person who attempted to live his life in keeping with the notion of Christian modesty. Fedorov devoted himself body and soul to his work as a librarian, a context that shaped many of his ideas. It was working in libraries that gave him a daily sense of the importance of the past, of carefully archiving it to save it from utter oblivion. Fedorov did not shy away from people, however. On the contrary, he cordially welcomed all visitors to the libraries where he worked and was an extremely attentive interlocutor. Fedorov's coeval Leo Tolstoy, the young philosopher Vladimir Solovyov, and the young experimental scientist Konstantin Tsiolkovsky spent hours on end talking with him. Nevertheless, despite the rumors of the amazing librarian and the relative accessibility of his manuscripts, it wasn't until 1906, three years after Fedorov's death, that his disciples began assembling his theoretical works, culminating seven years later in the book *Philosophy of the Common Task* (the phrase which subsequently came to designate Fedorov's doctrine). Fedorov's works were not published during Soviet times. His ideas were a disavowal of both Soviet atheism and the official doctrine of dialectical materialism.

The Russian religious thinkers greatly influenced by Fedorov suffered a much sadder fate. Valerian Muravyov was sent to the camps in 1929. Father Pavel Florensky was shot in 1937, the same year that Alexander Svyatogor was arrested and sent to the camps, where he died. Alexander Yaroslavsky was shot in 1930. The hard scientists among the cosmists were more fortunate. Tsiolkovsky lived out his days peacefully. Vladimir Vernadsky taught and researched until his death in 1945. Alexander Chizhevsky did research in the camps—a minor privilege granted him in otherwise desperate conditions—and continued his work after his release. The late 1980s witnessed the thoroughgoing study of the works of Fedorov and the other non-scientist cosmists as well as the unification of all the doctrine's adherents into something like a single theoretical front within the Soviet Union.

Fedorov's ideas penetrated the West slowly and gradually, often through references in works by Nikolai Berdyaev. After the Second World War, a handful of Slavists took an interest in certain aspects of the cosmist legacy, and cosmism warranted brief mentions in anthologies on Russian philosophy. The late Seventies, however, saw the publication of several book-length surveys, including George M. Young's *Nikolai F. Fedorov: An Introduction*, and Stephen Lukashevich's *N. F. Fedorov 1828–1903: A Study in Russian Eupsychian and Utopian Thought*. After

Francisco Infante-Arana and Nonna Gorunova, Artifacts (from the series Centers of the Curved Space), 1979.

the fall of the Iron Curtain, the cosmists were increasingly mentioned in studies of the Soviet space program and the culture surrounding the exploration of outer space, and theorists such as Tsiolkovsky and Chizhevsky took their rightful place in the history of science. Translations of works by Fedorov himself were published in the Nineties, the same decade in which Boris Groys edited a volume of historical texts by cosmists in German translation.[1]

Nevertheless, Russian cosmism remained a niche topic until the end of the 2000s.

Finally, in 2012, George M. Young published a full-fledged historical study, *The Russian Cosmists: The Esoteric Futurism of Nikolai Fedorov and His Followers,* in which the scientific cosmists coexisted with the religious thinkers, and the theoretical problems of cosmism as a

unified doctrine, embracing a gigantic complex of quite diverse concepts, were tackled. Simultaneously, a variety of techno-optimists, accelerationists, and transhumanists were becoming more interested in cosmism, including Ben Goertzel in his book *A Cosmist Manifesto: Practical Philosophy for the Posthuman Age*, which situates Russian cosmism within pseudoscientific futurology and polemics about technology.

With cosmism's influence on Russian, Soviet, and post-Soviet art, the historical avant-garde emerges in all its diversity, including Vasily Chekrygin's futurism, Pavel Filonov's analytical art, Malevich's suprematism, Kandinsky's abstractionism, and Alexander Labas's utopian subjects. In addition, cosmism had a direct impact on the intuitive artists immersed in Eastern spirituality, for example, the group Amaravella (Sanskrit for "sprouts of immortality"), which was close to the circle of the artist, traveler, and superstar mystic Nicholas Roerich. Amaravella's aesthetic views and esoteric paintings, produced in the 1920s, were ignored by the general public and scarcely had any chance of surviving in postrevolutionary Russia, where all other subjects would soon be wholly displaced by the all-powerful Socialist Realist canon.

Alexander Labas, Aliens: Variant, 1974. From the series The Inhabitants of Distant Planets.

In the 1960s, amid the Khrushchevian Thaw, the triumphal exploration of outer space, and widespread interest in cybernetics, there emerged a geometric and kinetic art that harkened back to constructivism, the avant-garde's figurative experiments, and the dynamic art of Naum Gabo. The interests of the group Dvizhenie ("Movement"), as embodied by its leader Lev Nussberg and other artists, lay in engineering, science, and technology. On the other hand, they involved a holistic view of the world as a specific environment, a kind of harmonious biocosmos whose basic principle was movement. The singularity of existence, the unity of parts and the whole, and the affinity of everything with everything else (in particular, the synthesis of the various art forms) formed the basis of the aesthetic program of the Russian kinetists. Their futuristic project *Macropolis*, or *Artificial Bionic Cybernetic Environment*, was a model of an artificial world at whose heart was situated the city of the future. (The future, in this case, was the middle decades of the twenty-first century.) The kinetists successfully combined aesthetic exploration with official commissions. Dvizhenie worked on decorating Leningrad for the fiftieth anniversary of the October Revolution, a project for which the artists were able to employ their own photo-kinetic designs. Among other things, they wowed the public with their famous kinetic flower, a huge glowing and spinning object symbolizing the universe. The focus on synthesizing the natural and artificial, on organizing nature and the man-made world into a single cosmological order, would be present from the Seventies onwards in the works of Francisco Infante, a former member of Dvizhenie who has walked the line between installation art and land art, as captured in photographs.

In the 1980s, concerned that the space race had enclosed the idea of outer space in positivist boundaries and squeezed it in a geopolitical, militaristic vise grip, the Moscow conceptualists tackled cosmological subjects. In 1986, Ilya Kabakov presented his installation *The Man Who Flew into Outer Space from His Apartment*, in which space was presented as a realm of total freedom, a place where a person could make his individual escape from the hopelessness of the late-Soviet stagnation period. Nearly twenty years later, in 2004, Collective Actions mounted the absurdist performance *Voyage to Saturn*.[2] While listening to a tape recording of a sci-fi story, the artists "nailed" a diagram from a book by Andrei Monastyrsky (the shape at the center of the diagram vaguely resembled Saturn) to a snow bank using a loaf of black bread whose crust had been studded with pictures of random people taken from a Soviet encyclopedia. The performance *Wall Newspaper*, mounted by Collective Actions the same year, also contained an allusion to cosmism's focus on human resurrection.[3] The materials on the makeshift wall newspaper were grouped around an excerpt from Georgy Martynov's sci-fi novel *Visitor from the Abyss*, about a Soviet diplomat who has been resurrected eighteen centuries after his death.

The creative duo of Igor Makarevich and Elena Elagina, former members of Collective Actions, soon turned directly to Russian cosmism. In their 2009 project *Common Cause* (the English title is an alternate translation of "common task"), Makarevich and Elagina imagined Fedorov's doctrine as a meta-utopia (a "Great Utopia"), a meta-project combining Christian mysticism and materialism, and hence extremely open to interpretation.[4]

Collective Actions, Voyage to Saturn, 2004. Performance.

Common Cause involved several installations. The first of these, *Oven with Three Ladders*, consisted of a three-sided ladder propped atop a Russian oven. The second, *The Celestial Staircase and the Ethereal Island*, consisted of a red toadstool, symbolizing "pastoral care of the cosmos," on which a model of Tatlin's *Monument to the Third International* had been mounted. (The spiral-shaped "international" functioned here as the celestial staircase, while the hallucinogenic mushroom was the "ethereal island," respectively.) According to Fedorov, this staircase (or, as he called it, "ladder") symbolized humanity's evolution and ascent, as well as the unification of the heavenly and mundane in both senses, the divine and human, and the cosmic and telluric. "Ethereal island" was Tsiolkovsky's definition for the so-called known universe. The phrase was not a metaphor, but the fruit of the cosmist and scientist's scholarly intuition. Tsiolkovsky argued that ether was the material environment surrounding the universe and, at the same time, the source of its emergence. Thus, he considered the ethereal state the first phase in the shaping of the solar system.

These projects were followed by the installation *Unknown Reasonable Forces*, based on a diary entry by Tsiolkovsky. On a May evening in 1928, Tsiolkovsky had a vision. He saw the three Latin letters *rAy* in the sky, which he deciphered as the Russian word *rai* ("heaven"), given their phonetic similarity. These electrified letters were the key element in Elagina and Makarevich's installation.

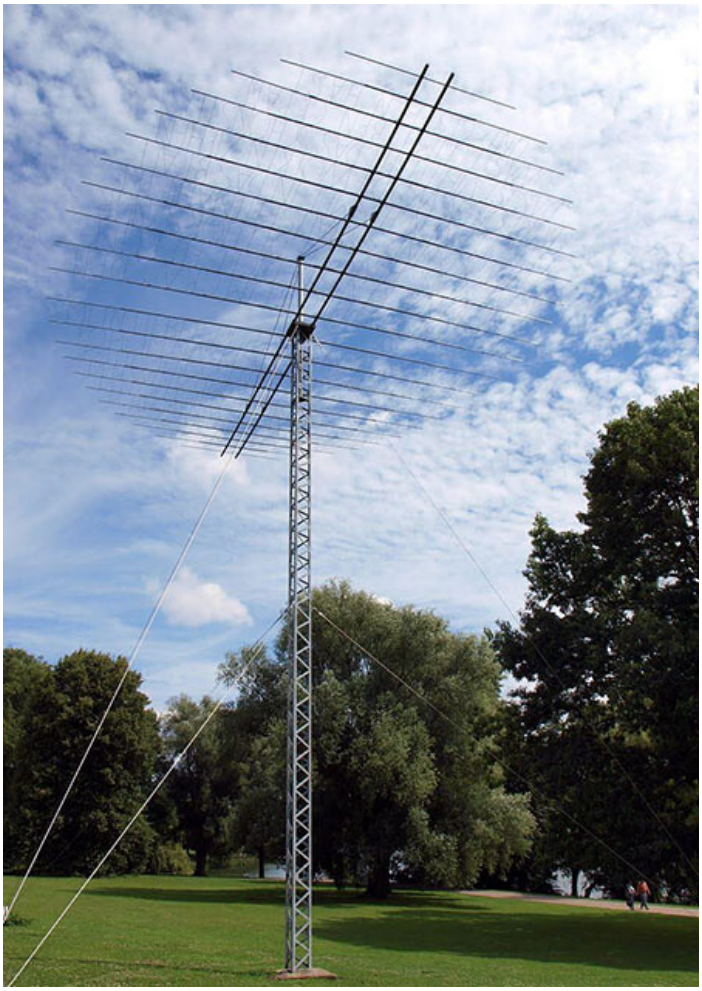
The poignant paintings and graphic works of Pavel Pepperstein, too, are chock full of ironical utopian subjects involving the exploration of distant planets. Quite curious in this regard is his sci-fi noir film *Sound of the Sun*, produced many years ago in collaboration with Natasha Nord. The film deals with the notion that sunlight is sound, and that people behave differently when this sound is amplified. This is a clear reference to Chizhevsky's heliocentric theories, according to which people's actions

Elena Elagina and Igor Makarevich, Irrational Forces of the Unknown, 2010. Installation, wooden ladders, neon, shoes.

are directly dependent on bursts of solar activity.

The cosmist tendency has been clearly legible in post-Soviet art beyond conceptualism. We might recall Leonid Tishkov's "macaroni cosmism." Tishkov evoked the cosmists through futuristic designs built from macaroni, including a macaroni tube, dedicated to Tsiolkovsky, for traveling in space, and an "Ionic Sun," a prickly ball of spaghetti noodles, arranged in rays, that resembled both the sun and Chizhevsky's renowned chandelier.

In the last decade, the group Vverkh! ("Up!") has consistently elaborated the subject of cosmism. Although cosmism was not a starting point but a conditional frame for combining the creative interests of the artists, it was cosmism that encouraged the future members to conceive of themselves as a group. Emerging in the spring of 2010, Vverkh! claimed they were working on constructing a so-called Temple of Cosmism, a cultural space synthesizing science, religion, and politics. The idea of cosmist synthesis once again proved extremely seductive, defining both the group's method and stance. The roster of participating artists has remained flexible, and the "temple" has been conceived as an unfinished collective project. Each individual exhibition is a kind of building block that goes towards the construction of the virtual temple, although actual, palpable "cosmist" altars have been erected at several shows and performances. One of the group's first works, *Necrophonia* (2010), was a recording of the acoustic vibrations produced by the graves of Russian poets, writers, and scientists, including Gogol, Nikolai Zabolotsky, and Vernadsky.[5] It is a kind of auditory séance with the dead "fathers." Some of Vverkh!'s shows and performances have taken place in unconventional, non-institutional spaces such as the countryside and apartment galleries. For example, the exhibition *Field of Silence* (2011) was mounted in a



Ilya and Emilia Kabakov, Looking Up, Reading the Words, 1997. Installation.

snow-covered field in the village of Khlebnikovo. After dark, a row of televisions arranged in the snow lit up, showing video works by the artists.[6] The cold, snow, and distance from the bustle of the city were meant to underscore the sense of abandonment and the emptiness of space. The same year, the group produced and screened several video films, including the diptych *Yu-165*. *Yu* is an allegorical tale based on excerpts from cosmist texts and Yuri Gagarin's biography, while *165* is the story of a reclusive writer and an artist, both of them obsessed with the fear of death.

Twenty people have been involved in Vverkh!'s projects at various times. Although currently the group has practically ceased to exist, its members have been in no hurry to write off cosmism, and they have remained involved in the "temple" in a certain sense. In February of this year, the film *Elixir*, shot by Vverkh! member Daniil Zinchenko, was screened as part of the Berlin Film Festival's Forum program.[7]

Elixir is a feature-length film about Russia itself. According

to Zinchenko, Russia is a space where the horizontal and the vertical, expansiveness and outer space, intersect. The film is a dense tangle of myths and archetypal images that cannot be unraveled. (And, apparently, according to the film's concept, do not need to be unraveled.) The film features a fairytale Russian forest and swamps, and characters such as Serafim and the Carpenter, cosmonauts and guerrillas, bureaucrats and even the Motherland, portrayed as a distant, winking constellation. It is difficult to tell whether the festival audience was able to descry *Elixir*'s local philosophical subtext, but Russian viewers would know for certain that the myth of Russia was a cosmist myth, a myth that would be impossible without specific religious and philosophic grounds.

Arseny Zhilyaev, Tsiolkovsky, Second Advent, 2015-2016. Mixed media.

Over the last year, Arseny Zhilyaev has tackled cosmism head on. His project *Cradle of Humankind*, about a network of museums of the future that have entangled the universe, was shown at the Venice Biennale. The network is a global museum, transcending national boundaries after humankind has transcended planetary boundaries. The Earth has turned into a museum corporation that flamboyantly combines the conservative function of museology with entertainment. Even though humanity spreads across the Universe, capitalism won't collapse under the weight of its own contradictions. Quite the opposite, the planet Earth will turn into a huge shopping mall, and the cosmist project will become a dystopia. The exhibition included graphic works, stained-glass pieces, and gilded objects—for example, a model of the world and a human figure entombed in a glass coffin. Zhilyaev's historical project *Cradle of Humankind 2*, which dealt with Nikolai Fedorov, was partially implemented at a Moscow pop-up exhibition, accompanied by a conference featuring Anton Vidokle, Natalia Sidlina, and Anastasia Gacheva. The conference was occasioned by the publication of the book *Avant-Garde Museology*, which presents Russian cosmism as integrated into the historical avant-garde.[8] Sidlina was a co-curator of the popular show *Cosmonauts: Birth of the Space Age*, which ran from September 2015 to March 2015 at the Science Museum in London. Despite its hard-science perspective, the show featured futuristic drawings and sketches by Tsiolkovsky and selected works by Ilya Chashnik, Ivan Kudryashov, and Konstantin Yuon. Anastasia Gacheva is a specialist in Russian religious philosophy and the history of cosmism who now runs the Nikolai Fedorov Library and Museum in Moscow.

Anton Vidokle, Immortality and Resurrection for All!, 2016. Video, single channel.

A film trilogy by Anton Vidokle presents a contemporary interpretation of the cosmist worldview. The first film, *This Is Cosmos*, is a video that mixes excerpts of Fedorov's writing with texts by Voloshin, Maria Ender, Alexander Chizhevsky, Ilya Kabakov, Andrei Monastirs, and others. The second part, entitled *The Communist Revolution Was Caused by the Sun*, was shown at the 6th Moscow Biennale of Contemporary Art, and explores some of Chizhevsky's ideas about medical heliobiology and the relationship between solar cycles and human history.[9] While watching the film, the viewer makes a journey to Kazakhstan, where Chizhevsky worked for a long time. Kazakhstan has also been the heart of the Soviet, and now Russian, space programs, as it is the site of the Baikonur Cosmodrome, where Russian rockets are launched into space. Vidokle's third film is currently in the works.

Cosmism's widespread reemergence and export to the West has not been the outcome of a collective impulse to rehabilitate a theoretical project that vanished from the map of the imaginary nearly a hundred years ago. Rather, it reveals a continuity of thematic interests paradoxically present in contemporary art despite the differences among generations and contexts, formal approaches and idioms. But why have artists continued to evoke the legacy of Russian cosmism, what with its naiveté, esotericism, mysticism, and, in the case of most cosmists, the emphatic Russophilia of its ideas? Why does art that vigorously evokes the theoretical, discursive aspect of cosmism pay far less attention to rethinking the artistic practices

shaped in the womb of cosmism and engaged in direct dialogue and polemics with it? Why has the topic, seemingly pigeonholed and examined from all possible angles, not been exhausted, continuing, instead, to unfold and expand, navigating recent times? What are the causes of this capaciousness and magnitude, of the ability to expand and prolong the subject, multiplying it in hundreds of art projects? What, finally, links the problems of today with the issues that concerned the cosmist scientists a hundred or more years ago?

Cosmist outer space was a space in which earthly time and gravitation had been surpassed, a space where biological clocks and their concomitant fears no longer existed. Working with cosmist ideas is attractive, because, first, anything—or, at very least, many things—is seemingly possible in this space, and second, cosmism, as an art project itself, argued we should regard eternal life as art, and art as a tool for cosmologizing the world, i.e., a means for the simultaneous rational and sensual organization of chaos, a gnostic vaccine inoculating humankind from the ultimate dispersion of matter and meaning. To fully answer the above questions, we should recall certain key features of Russian cosmism—which was a set of quite disparate ideas—as well as what united them.

Russian cosmism included a variety of concepts focused on humankind's conquest of the entire universe both literally—in the sense of spreading human life throughout the universe—and figuratively—in the sense of overcoming cosmic illiteracy, i.e., developing our understanding of how outer space is organized and employing this understanding for the benefit of human civilization. Life in space was not reduced to colonizing other planets, but also embraced interplanetary space (e.g., Tsiolkovsky's "ethereal settlements," vertically elongated cities built in orbit around planets) and eventually the entire universe. Most cosmist concepts contained three components. The first component was immortalism, a focus on ensuring immortality, from rejuvenation by means of blood transfusions in Bogdanov, to the resurrection of the dead in Fedorov. The second component was so-called active evolution: the conscious overcoming of the limitations laid down by consciousness and nature, space and time. It was a natural consequence of humanity's prolonged development and humanization of the world (i.e., it was the result of a kind of creative growth), but at the same time evolution was to be taken under the strict control of reason, moral sense, and notions of justice. Active evolution was an intermediary, obligatory stage. After passing through it, the humans of the past would become the humans of the future, absolutely rational and just, endowed with unlimited capabilities, and so on. The third component was a moral and ethical system that combined elements of Christianity, occult doctrines, asceticism, and Marxism. It was a special type of social responsibility that emerged only when individuals became aware of their close and continuous link with civilization, with the humankind of past, present, and future.

So we see that cosmism had its own, completely unique cosmos. This cosmos was not transhistorical: it was a utopian horizon that had to be reached in the very near future. The individual's objective was to accelerate the process. While most inhabitants of our planet regard space as the starry heavens above their heads, the cosmists also saw it as vouchsafing the fulfillment of moral law.

Russian cosmism was a totalizing project. Tsiolkovsky's oft-quoted saying that "Earth is the cradle of humankind" can easily be compared with Hegel's assertion that "slavery is the cradle of liberty." The cosmists argued that becoming human in the true sense was possible only by humanizing the universe, by completely infusing it with human artistic and creative energy, which would lead finally to this energy's full revelation. The humans of the future were, in some ways, more advanced versions of the cosmists. The cosmist scientists were experts in many disciplines. They simultaneously pursued both the hard sciences (moreover, several at once) and religious philosophy. A few centuries after the Renaissance man and long before the scientistic rage for interdisciplinarity, cosmism imagined an artist-cum-researcher thinking beyond disciplines and formal restrictions, and motivated by the desire for the absolute intellectual and creative freedom that was available to everyone. Like Renaissance culture, cosmism was anthropocentric, but it was an anthropocentrism focused on the collective rational subject, one that had absorbed the lessons of Russian religious thought and the theories of the utopian socialists. Cosmism's totality was also ensured by the fact that it dealt with a social ideal that embraced (and permeated) the entire universe. This ideal put a premium on the fraternalism and responsibility that ensured immortality, which, like salvation from disease, was one of the objectives in cultivating outer space and would become our "common task." Fedorov, who conceived the concept of the common task, thought we should combat the individual's non-fraternal condition by developing "means of restoring kinship." All men and women were brothers and sisters because they shared the same universe.

Declaring the "cosmic growth of humankind" its goal, cosmism was, of course, a modernist project, but it was the project of an alternative modernity. It experienced the tremendous impact of scientific theory, becoming its esoteric extension. The dream of human immortality was not a romantic fantasy, but an integral system of viewpoints that grew out of a principled refusal to view the world through the eyes of the lonely and selfish individual, that is, through the eyes of the nihilist. Immortality implied an unwillingness to separate the human of the present from the human of the past, as well as the destruction of all obstacles standing between people, so they could easily feel as one. Progress, in this instance, was neither

Elena Elagina and Igor Makarevich, Pagan (Tatlin's Mushroom), 2008. Papier-mache, wood, enamel.

an end in itself nor a harbinger of the revolutionary rupture (although the idea of a mandatory period of active evolution did resemble the inevitable dictatorship of the proletariat on the road to communism), but a natural necessity and measure of morality.

Russian cosmism was thus a radical response to the less humane, positivist, and rationalist doctrines of the nineteenth century. It poeticized their scientific components while problematizing existential questions. At the same time, most of the cosmists argued with the materialists, from Engels to Chernyshevsky, proposing an alternative, animated materialism, but a materialism all the same. Cosmist materialism often resonated with the materialism of Henri Bergson, who insisted on the duration and continuity of matter, which was intuitively, not analytically, knowable. The outcome of such cognition—cognition enacted due to a kind of power surge, an excess of intuition—was, in fact, the evolutionary process, which included this eternal duration, involving the constant penetration of past into present. An important difference between cosmist philosophy and the thinking of Bergson, who regarded all evolution as creative evolution, was that the cosmists maintained a purely pragmatic attitude towards evolution. This attitude was an ethical imperative: evolution could and must be prudently managed for the welfare of mankind.

An inalienable part of this collective well-being was the preservation of human physicality, the triumph over death. For example, Tsiolkovsky's idea of positive entropy maintained that, after death, all the molecules constituting the human body were freed from the prison of the flesh and traveled around the universe, literally escaping into outer space. Even if a person did not manage to will, as Einstein did, that she be cremated and her ashes scattered to the wind, her corporeal matter would spread throughout the universe. The postmortem movement of bodily matter was, in fact, eternal space travel. One of the most striking evocations of the debates on matter can be found in Andrei Platonov's unfinished novel *Happy Moscow*, in the passage where Dr. Sambikin shows his friend the "cause of all life." Dissecting a corpse, Sambikin points out the empty section in the intestines between undigested food and excrement. This emptiness, which "sucks all humanity into itself," is simultaneously the soul and the engine of world history. This illustration is consistent with the orthodox dialectical scheme at the basis of historical materialism. We can assume it would also suit the cosmists, with the proviso that the detected "empty soul" continuously produce brotherly love and moral sense.

These considerations lead us to the first explanatory hypothesis. Why is art still interested in Russian cosmism? There has been much talk recently about the end of the era of grand narratives, fatigue from relativism, the coming age of neomodernism or altermodernism, and the corresponding need for a new, unified sensibility amid a world of infinite differences. In turn, this has given rise to efforts to rehabilitate modernist projects long situated on the periphery of the art world's attention. Does the cosmist turn testify to the search for a new, altermodernist project? Here we can divine a fully formed desire to get rid of the split subject by reassembling it and implanting it in new circumstances. Perhaps the demand for the universal as opposed to the particular, a demand articulated through a borrowed, old romantic dream of future unity, might be considered a delayed reaction to post-Fordist globalization, which has produced total isolation. After all, with the respect to the hard-nosed rationalism and enlightened nihilism of the nineteenth century, cosmism was the selfsame "new sincerity" whose emergence researchers of society and culture have noted against the declining fortunes of postmodernist cynicism.

The second hypothesis is that artists want to address our unresolved relationship with the future and talk through the utter lack of a current futurological project. Despite the fact that an image of the future can be assembled from a number of portrayals in recent sci-fi films, this image has been extremely fragile and has immediately shattered into hundreds of disjointed, scattered shards. The future as a project, even a romantically tinged project, has been

simply lacking nowadays. Everyone clearly sees that technological development is primarily focused on consumer technologies, that is, on the targeted improvement of everyday life, not on building orbiting cities in outer space.

Even the most accurate, thoughtful prognoses, taken together, are incapable of pointing exactly where human progress is headed nowadays. The cultural mechanism responsible for the production of new ideas about the future has seemingly become dilapidated and broken down. This state of affairs was theorized by Mark Fisher in his 2009 book *Capitalist Realism*. The current pace of changes in the market requires rapid adaptation from the people swept up in it, meaning it becomes impossible to plan one's own life. We are unsure of what tomorrow will bring, and we neurotically monitor and scan reality, on the lookout for all the new trends. Reality is rendered an object of constant evaluation and short-term investment; all our intellectual and creative powers are focused on it. It is hardly the present, as Malevich had promised, to which what "grows on its shoulders" would belong. It is a present that knows that nothing belongs to it and that its shoulders are powerless. Consequently, we are suffering from a crisis of the utopian imagination, and one of the few available therapeutic remedies entails working with the future inherited from the past.

A still extracted from Daniil Zinchenko's 2015 feature-length movie Elixir.

The third hypothesis has nothing to do with the future as such, but with the human being of the future, who, judging by numerous manifestos, theoretical works, conferences, and so on, is nowadays much easier to imagine than the future itself. Aside from the fact that Russian cosmism certainly has had an indirect impact on transhumanists, in the scenario conceived by the cosmists themselves human beings would find themselves in fundamentally new anthropological circumstances by taking full responsibility for the universe. In this case, anthropocentrism and ecocentrism are not opposites, but are practically identical to one another. This is what Western researchers have talked so much about recently as they have problematized the concept of the Anthropocene, which has captured the imaginations of geologists, biologists, transhumanists, and even environmental activists. Proponents of the concept argue that, in the 1950s, a new geological era kicked off in which the Earth's destiny became inseparable from the fate of human civilization. (The previous era, the Holocene, lasted eleven to twelve thousand years.) According to certain calculations by supporters of the theory of the Anthropocene, geological processes no longer exist in and of themselves. Human beings and human progress have fundamentally altered the Earth's physical and chemical makeup, the movement of water and tectonic plates, and the mineral composition of the soil and subsoil. These processes cannot be reversed; no environmental activism will save them. The bifurcation point has been passed, and now we have to understand how to live with it. From the perspective of the social sciences, it is important to note that recognition of the fundamentally new era features an affirmative approach to humanity's intervention in nature, the final abolition of the opposition between the natural and the artificial. Wasn't this what was predicted by the cosmist Vernadsky, who argued that, by altering the biosphere, humanity would be able to create a noosphere and become a "powerful geological force"? So attention to cosmism, on the one hand, reflects general concern and anxiety about the Anthropocene. On the other hand, it is a valuable conjuctural action, an attempt to connect local history with the global scientific context.

The fourth hypothesis, which has been partly touched on by Groys in his texts and Zhilyaev in his exhibition projects, concerns museification. Nowadays, the museum is conceived not as a custodian of tradition or a graveyard of the arts, but primarily as a relatively open space that is attached to a particular apparatus of bureaucratic capitalism. The museum is a vehicle of institutional power. Art tried but failed to destroy the museum, to make a final break with it. Art called on artists and viewers to take to the streets, so to speak, and it took to the streets itself. It even went online, but the museum has not yet embarked on the path of self-destruction. Maybe in this case it makes sense to shift the boundaries of the museum itself, to deterritorialize it, to work with its formal and semantic boundaries. Aside from its expositional, educational, and entertainment functions, there is some doubt as to whether the museum will be able to carry out its memorial function in the future. What, for example, will the museums of the future have to exhibit from the current era: galleries of screenshots, logs of social network conversations and instant messaging services, and analyses of big data? According to Fedorov, the universe of the future would be a "resurrectional" museum, a museum of resurrected human bodies, a museum that had conquered death, i.e., a museum of life. It would be a total museum where, as in cosmism itself, physics would be fused with mathematics, culture with biopolitics, the artificial with the human. Such a museum would radically

reorient our sensibility from the subjective to the objective.

Fedorov once commented on the museum's contradictory status within culture, the dialectic of contempt and honor revealed in its system of attitudes. Putting something in a museum is tantamount to hauling it to the scrap heap, to writing it off as useless, to eliminating it from life, but at the same time, it involves carefully storing it and exalting it as a valuable artifact. Engels once used a similar example to elucidate the Hegelian law of *the negation of the negation.* The ancient philosophy of primitive materialism, rejected by the monotheistic religions and metaphysical idealism, can still be divined in modern materialism. The law seemingly corresponds to cosmism: destroyed at the level of form, human life must necessarily be preserved in terms of its content.

It is vital we examine all these questions pragmatically. The museum has reconciled progressives, who insist on the need to get rid of everything irrelevant, untopical, and not "contemporary," and conservatives, obsessed with the desire to preserve everything obsolete and their own links to the past. Like the museum of the future, the cosmist project has been a realm of relatively peaceful coexistence. For the time being, it has accommodated leftists and rightists, artists, techno-skeptics and techno-optimists, futurologists and liberal arts scholars. Camouflaging its strict moral stance beneath a colorful canvas of sci-fi and mystical ideas, cosmism was tolerant in the Christian sense and intellectually flexible, as malleable as modeling clay.

For the time being, cosmism can be used effortlessly to handle terrible, irrational, and gloomy topics without fear of offending anyone's feelings or interests. And although it might seem that cosmism stretches like elastic, admitting everyone to its realm, it has miraculously avoided clear-cut appropriation. It does not yet belong to anyone, nor is it affiliated with anyone. Cosmism is still a no man's land, which makes it not only a popular local subject but also a temporarily safe buffer zone for the organization and deployment of opposing forces. Cosmism's harmlessness, the apparent weakness of its social and political stance, is a temporary circumstance. Everyone who wanders into no man's land always runs the risk of getting caught in the crossfire. That is why Russian cosmism, extremely attractive to supporters of various ideological views, is the site of an impending war. It is the past in the future over which a bitter struggle will unfold, a struggle wherein spectating is not an option.

X

Translated from the Russian by Thomas Campbell. An earlier version of this essay in Russian was first published on Colta.ru.

Marina Simakova is a Russian researcher and cultural critic based in Saint Petersburg. She studied contemporary philosophy in Moscow, London and Paris. Her research interests include Marxism, critical theory, cultural studies and early Soviet literature. Her critical essays and translations have been published in *Colta.ru, Openleft.ru* and *Translit journal*.

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