

Techno-Politics for Artistic Resistance: Apprehending the Present Towards a (Tentative) Future

Brian Bartz, December 2018

0000. OVERVIEW

To be an artist in the present means to, whether directly or indirectly, reckon with certain sets of global realities (and consequences): the widespread re-instantiation and proliferation of neo-fascist / reactionary ideologies, slow and inevitable planetary death, the inconspicuous mass-proliferation of technologies of power, and the wholesale economic and environmental devastation of the world's poor and non-white populations, to name a few.

We no longer live in a world where selective blindness is viable. Artists, while often unable to directly enact social change, are at least situated to actively sow seeds of discontent and generate new bodies of radical thought; they are the catalytic reagents for larger reactions to occur.

There exists a conditional future in which technology finally emancipates humanity from the limitations of capital, where technological mediation and remediation become viable instruments of collective power and healing. What are the limiting reactants preventing these outcomes? How do we apprehend the present towards an artistic reckoning with this (tentative) future?

0001. NEOLIBERALISM

Neoliberal capital is the dominant ideological framework upon which new categories of technology are being expanded. What is it? Too often neoliberalism is used as a buzzword without definition in hand. It is important to give body and form to it conceptually, if it is to be used as the lens with which to apprehend the belief systems encoded into emergent technological systems. Neoliberalism exists on two intersecting axes: political economy and personal economy.

0001-A. POLITICAL ECONOMY

The axis of political economy is how neoliberalism is most commonly understood. It encapsulates the “neo,” new form of classical economic liberalism that was dominant through the nineteenth and first half of the twentieth century. This liberalism inscribed into Neoliberalismⁱ is that which was originally designed by Enlightenment thinkers such as Adam Smith, later modernized by economists like John Maynard Keynes; in short, this form of liberalism advocates for free market principles, minimal government interference into the market, and the “naturalness” of the market as a sociopolitical structure, all of which establishes

itself on a bedrock of private property rights and individualized social contracts. This system of belief necessitates the overlooking of structural inequalities against marginalized groups, instead believing that a completely unregulated market is the fairest arbiter of social relations.

On the axis of political economy, the “neo” of neoliberalism is a divergence that came about in the 1960’s, largely through the work of Milton Friedman and the Chicago School of economic theory, truly crystallizing into the mainstream during the era of Reagan, Thatcher, and Pinochet. Rather than argue that the market is a purely natural force, neoliberals instead believe that it is, as Wendy Brown argues, *Achieved and Normative*ⁱⁱ; it exists as a result of the state rather than in opposition to the state. The neoliberal market thus depends on the state to carve out space for it through austerity policies and deregulation, just as the state increasingly relies on the neoliberal market for liquidity. As such, in a neoliberal society, there exists significant leakage of market rationale onto the political, such that governing bodies are understood through market terminologies. Therein lies one of the fundamental neoliberal relations: one in which the state is beholden to the corporate, and the corporate is beholden to the state, neither of which are beholden to the citizenry.

0001-B. PERSONAL ECONOMY

This is where the axis of personal economy intersects. With neoliberalism, the leakage of market rationale does not stop at the political; it quickly expands into our personal lives as well. We judge ourselves and one another based on human marketability and “social capital.” As such, neoliberalism is not simply an economic framework so much as a *political rationality*, which Foucault describes as a self-normalizing form of societal organization which intentionally imposes its belief systems onto aspects of everyday life and conceptions of state subjecthoodⁱⁱⁱ. To exist as a proper neoliberal subject, we must be constantly in the process of accumulating new social capital, and exploiting ourselves in order to do so.

This leakage is essential to the business model of big-tech; they represent a vast shift in which social relationships are subsumed into capital relationships through networked super-structures of social communication (i.e. the Internet). Market value is now simply derived from individuals maintaining and expanding social relationships online through proprietary interfaces (the moment of consumption *is* the moment of production). This shift necessarily entails the imposition of markets into ever smaller fractions of our lives, such that there will eventually be no place to turn that is free from the, “invisible hand” of the market.

0010. MACHINE LEARNING

Machine Learning is a paradigm in computing that only became viable in recent decades, in tandem with vast expansions in computational power, and huge accumulations of data. It allows for programmers to develop algorithms which can “learn,” granting these algorithms the ability to operate and classify inputs without being explicitly programmed how to do so. Essentially, a programmer “feeds” the algorithm vast datasets that it then “learns” statistical patterns from. The algorithm then uses those learned patterns to classify and understand new inputs in the real world^{iv}. They have rapidly become a go-to technique with which to automate many programming tasks, ranging anywhere from the creation of self-driving car software, stock-market finance optimization, automation of medical diagnosis, determination of social-media feed content, credit-checks, “risk assessments,” and even the “intelligent” processing of surveillance data. While much could be written on this alone, to get to the point: this paradigm in computing prophesizes immense consequences.

Something striking about this type of programming is the fact that even those engineers who design such algorithms cannot know exactly why the algorithm makes certain decisions (let alone regular people who interact with it on a daily basis). This is because *the algorithms were not explicitly programmed how to behave*, but rather fed data from which they extract statistical patterns for their task. For many, this autonomy leads to fantasies of machine learning being the precursor to, “sentient” Artificial Intelligence (AI). While plausible, this is not the most pressing outcome of machine learning to concern ourselves with; to believe that machine learning’s logical endpoint is a kind of sentience misses the point that, as Matteo Pasquinelli argues, machine learning, “will never be autonomous from humankind and, for sure, from the difficulties of capital, since it is a functional component of industrial planning, marketing strategies, securitarian apparatuses, and finance.”^v A majority of the implementations of machine learning that most people interact with serve to reinforce the stranglehold of capital, especially considering that any datasets we use to create such algorithms encode the biases of our neoliberal, neocolonial society.^{vi}

These days, in perhaps the broadest sense, machine learning is being deployed as a means to automate the conversion of *data* into *knowledge systems*. It serves as a method by which technologists can take immense repositories of user-data and turn them into systems of meaningful correlation (insights, as they are sometimes called in the industry) with which to optimize their value-extraction, creating a vicious cycle of ever-increasing market efficiency and exploitation. And yet nobody knows how *exactly* they are working. We can, at best, make guesses about their decision making. What do we then do with the fact that they are invisibly listening to the pulse of everyday life?

That we will never know what these algorithms know? The logical endpoint of machine learning is not to create biomorphic systems wholly separate from human sentience, but rather concentrate and reflect our own tendencies and biases (which are products of neoliberal subjectivity) back onto ourselves. It is a matter of time before such algorithms become a functional part of nearly every structure we interact with in our day-to-day lives (they are already surprisingly close). As this paradigm in computing becomes increasingly widespread, it will only make it more difficult to disrupt such cycles; they constantly (re)inscribe the worst in us.

0011. EXPROPRIATION / AUTOMATION / THE COMING CRISIS

The process of capitalist expropriation, in the Marxist sense of the (illegal) seizure of the means of subsistence away from self-reliant populations, is by no means complete in the world. On the contrary, it is a process still underway in both western and non-western society. While many would believe this process was completed over a century ago, an ever increasing amount of people in non-western society are still being forced into the capital relation through illegal seizures (or, increasingly, climate-related dispossession forcing global refugees westward). Those already living in western society are further expropriated through what David Harvey calls accumulation by dispossession^{vii}. This can be seen in neoliberal constructs such as the debt economy (the profitability of mass debt), the carceral state or racialized dispossession generally (read: Jackie Wang's *Carceral Capitalism*^{viii}), as well as the wholesale gentrification of all urban locales in the United States, ultimately concentrating capital in the hands of the few.

One of the many net effects of this ongoing expropriation/dispossession is the exponential increase in surplus labor: we have too many people for the amount of jobs available, and the jobs available are usually precarious at best. Even tech jobs will become precarious as corporately-funded STEM education initiatives drastically increase the labor pool of qualified programmers in coming years. And on the flip side of this excess labor is technological automation (e.g. Amazon opening stores where employees are replaced with machine-learning enabled surveillance cameras^{ix}). The candle is burning at both ends so to speak; automation is accelerating at the same time as expropriation. This will rapidly create a crisis of labor in the near future.

What alternatives are on the horizon? There is the bleak reality of the gig economy, wherein job securities and protections are thrown out in favor of deregulated, race-to-the-bottom systems of compensation wherein workers (legally reclassified as contractors) are paid less for smaller tasks. Look at Amazon's Mechanical Turk, where a globally distributed labor force is paid cents to complete short survey tasks. Is this the future of labor? Will we all be grinding to complete surveys that generate datasets which

are used to further train the machine learning models that automated our jobs in the first place?

The fork in the road is here. Either we take the route of the gig economy and leave ourselves vulnerable to automation and dispossession, or we pivot towards societal protections; one way forward could be to simultaneously demand *vast* expansions of the welfare state, the institution of a Universal Basic Income (UBI), the full automation of as many types of labor as possible, democratic control over the means of production/survival, and the refocusing of surplus labor unto the healing and protection of dispossessed/vulnerable communities. Then we *might* be in a place to pivot away from neoliberal logic,^x but that is no certainty. Technological automation of labor is something that *should* free us from capital relations, not threaten to dispossess millions more. It is imperative we envision a future in which work and survival are not one in the same.

0100. DIGITAL LABOR

We must understand our interactions with network technology as labor. Big-tech profits off of our voluntary interactions with their interfaces. We actively generate data for them, which, using machine learning, is easily converted into a valuable knowledge commodity. This is an immense problem insofar as it provides a hyper-capitalist modality for the future in which compensated labor is decreasingly necessary. They are apparently ready for the eventual crisis of labor, but are we?

Let us demand wages for our interactions with social media^{xi}. Let us demand a share of the profits that are stolen from us. Our subjectivities are violently ripped away via our data and we are thus unwillingly implicated within the neoliberal project, only because we want to activate the radical potentialities of network technology. Why is it that we, as users, have no choice but to manufacture our own oppressions by our very nature as such? We should not have to be complicit in these systems of power simply for wanting to exist as nodes. We need a network defined collectively, not privately.

0101. SURVEILLANCE

Neoliberal techno-power is necessarily manufactured through surveillance. Both corporate and state surveillance enable this power, because in neoliberal society, the difference therein is largely negligible. Silicon-Valley is an armature of the state; a sweeping majority of government requests for user data are readily complied with by big-tech and data brokerages^{xii}. As Tung-Hui Hu argues, just as the advent of sewer systems placed a decentralized network of state power into every home, so too has the Internet brought the surveillance state into every individuals' life^{xiii}. Who is watching me? Are Amazon and the NSA competing to access the feed of my laptop's camera? Or is

Google just recording the feed and selling it to the CIA? Does it make any difference? We are all being recorded in countless different ways anyways.

This is not news. Most are aware of this, and even nominally oppose it. So what can be done? To what extent is the user-base of the Internet responsible for its own surveillance? I mean I clicked yes on the Terms and Conditions, didn't you? Is this form of power established relationally through mutual complicity, or imposed hierarchically from above? How does this complicate the act of resistance?

0110. ABSTRACTION / THE CLOUD

Abstraction is a concept in engineering. It can be encapsulated in the idea that, for the sake of efficiency and ease, let's replace immensely complex processes with a simple interface or metaphor that can be easily referred to and accessed, *even without any knowledge of the complexity below*^{xiv}.

For example, let's say a programmer writes some code that performs a certain task. In this case the code they write is a function called "multiply," and it just takes any set of numbers, multiplies them all together, and returns their product. Now let's say a second programmer comes along and wants to write their own program that multiplies a set of numbers together, but does not know how to do it. They go online and find the first programmer's code and paste that function into their program. All this second programmer then has to do, is write a single line of code that might look like this:

```
Answer = multiply(a-set-of-numbers-to-multiply-together);
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What is vitally important to see is that the second programmer *did not have to learn how to write the actual code needed to accomplish their task*. That is abstraction in action. The complexity of the system below (in this case the function which performed their actual task), was not necessary to comprehend to complete their goal. This removes the need to be literate in how computer systems work in order to use them, which both makes technology more and less accessible simultaneously; now any programmer can get their hands dirty and do something impressive without much knowledge, but they are completely confined by the limitations imposed by those who *do* "know-it-all". *It is a fundamentally false sense of freedom*.

And it is this same logic of abstraction that allows for easy-to-use interfaces which any user can interact with. It used to be that for anybody to use a computer, they had to be at least somewhat literate in how that computer actually functioned. But the rise of abstracted interfaces through constructs like operating systems, web browsers, and standardized conventions for interaction (e.g. buttons, menu icons, cursors), allow the

computer to exist as nominally accessible space for the greater public. But this access exists strictly on the terms laid out by those who create the interfaces. For example Facebook can claim they are empowering their users to share and connect, but at the end of the day the company gets to decide what that means and for whom. The logic of abstraction has reached us all and made computers usable for nearly anybody, but comprehensible for increasingly few.

If the examples above are how abstraction exists in a simpler sense, then what happens to abstraction at the other extreme? One answer is the metaphor of The Cloud.

What began as an exercise in efficiency, the metaphor of The Cloud has expanded to encapsulate so much, but obfuscate even more. From a technical standpoint, it is a lot easier to say let's just let "The Cloud" handle some task instead of having to know what that actually entails. This mentality eventually snowballed to the point that the primary way to neatly explain, in layman's terms, the global infrastructure responsible for network technology, is to invoke a metaphor: The Cloud. *This is no small act of erasure*; to be clear: the network infrastructure dematerialized by this abstraction consumes more energy than all but the top five most power-hungry nations in the world, more than India and Japan combined; and a majority of that infrastructure is coal-fired^{xv}. Not to mention this constitutes a complete overlooking of the incredibly complex global supply-chains, labor markets, and geological depletion necessary to put phones in our hands and cloud-based apps on those phones. *We must* re-materialize this infrastructure through whatever means possible.

0111. MILITARY / COMMERCIAL

In the same way that it is no longer fruitful to completely separate out, "The Corporate" from, "The State", so too is it unwise to think of commercial and military technologies as wholly separate categories. Sometimes it's the very same algorithms being placed into both, by the very same people. Look no further than Google's Project Maven, where they are developing and selling machine learning models for drone targeting to the Department of Defense (DOD)^{xvi}; models which likely resemble ones they make available for corporate use through their Cloud Computing platform. Or Amazon's Rekognition facial recognition suite, which is being sold to police departments across the United States to perform criminality checks and implement predictive policing programs^{xvii}. These types of facial/body recognition models or signal processing algorithms being sold to militarized entities are, in all likelihood, very similar to the algorithms placed into, "Smart Home" devices and phone cameras. What do we do with that?

The Internet itself emerged through military research; its original incarnation, known as ARPAnet, was a decentralized network of computer-nodes and communication protocols designed to withstand nuclear attack during the Cold War. Those protocols developed in its early military/research stages (TCP/IP, FTP) are in fact the *very same* protocols on which the whole Internet is still built^{xviii}. These are but a few examples.

The military's active legacy is a functional part of our everyday lives and exists (opaquely) in the structures that we all subsidize through use. Let us disseminate this information as a seed to dismantle militarized futures.

1000. TOWARDS A (TENTATIVE) FUTURE

What to do? As James Bridle argues in his recent book, one should not need to learn how to program to perceive or understand the immensely powerful systems producing the technology of today^{xix}. And yet, most technologists would argue more people just need to learn how to code. There exists a monumental gap between where we are, and what most people know. This knowledge gap is no accident; it is a byproduct of the fact that multinational corporations and governments alike rely heavily on secrecy and public naiveté to maintain their respective market-shares and powers. A large part of the immense task at hand is thus education. This gap in knowledge must be closed. For people to be critical and demand a better future, they should be literate in the technological systems they interact with. Whether this is enough, it is hard to say, but at least education is a tangible starting point.

And it is not necessarily just a technical type of education I am referring to: as important as it is for individuals to become more literate in the complexities of tech, it is equally important to comprehend the cultural implications therein. For example, it is insufficient to simply see how prolific the paradigm of machine learning has become; it is more about learning to think things together, such as how machine learning begets automation and thus the exacerbation of income inequality. Or how creating space for innovation necessitates the displacement of minoritized communities and bodies. It is just as much about learning the specificities of technology as it is coming to understand how those specificities interact on the basis of ideology.

As an individual artist, the question of how to do this work becomes complicated. Artist's are rarely, if ever, afforded the latitude, scale, or scope to singly enact widespread social change. So the question is then, what more can be done than trying to show people, engage them, and hope that they walk away with (more) critical inflections? How could an artist make work that does this? And since the individual is a non-viable unit for broad-scale resistance or reform, then the network must be reclaimed from private hands as a tool for collective potential.

To quote Critical Art Ensemble (CAE): “No artwork has made a difference – but this is the answer to the wrong question, which has already determined the failure of its object. The better question is, ‘What can an aggregate of actions do *over time*?’ No individual is powerful enough to effect change on their own (contrary to what some ideologies of individualism suggest) ... A single project can at best only restructure a limited situation, while it is the aggregate of politicized cultural actions that can create a break or shift in culture as whole.^{xx}”

How then might we think of art making as a collective tool against (technological) hegemony? Perhaps it is unproductive to consider it using the same metrics one might for activism. Art making tends not to create cleanly cut, causal relationships with its objects of critique, and thus should not be judged solely by its outcomes. And mounting clearly defined methodologies of resistance is not even particularly viable in the face of machine technology capable of literally subsuming criticism into its training program. At the end of the day, there really is no ad-hoc, direct-action solution for lessening the inequalities actively constructed and exacerbated through our current technological (i.e. neoliberal machine learning) revolution^{xxi}.

Perhaps this is why art-making is well situated as a medium to work through such problems; it represents a form of cultural knowledge production that is flexible enough to link seemingly disparate topics together critically. While rarely effective at strategizing change, art does provide an experimental space to lay down a theoretical groundwork, where artists can endlessly recombine ideas to generate new understandings of their relationships, and thus create new bodies of visually accessible knowledge around those relationships. I think of the works of Zach Blas, James Bridle, Hito Steyerl, CAE, and Trevor Paglen, (among many others), as examples of this sort of knowledge production, wherein the intersections of technology, culture, and power are (re)combined, both visually and textually, towards a horizon of understanding that will, in my mind, undoubtedly play a role in the eventual dismantling of neoliberal logic.

Contemporary art has carved out a powerful space in which radical, conceptual research that is *less* beholden to institutional powers may be performed. This is not always the case; as with any discipline, the logics of neoliberalism have inserted their fractilian tendrils deeply into the realm of artistic production. That said, art continues to demonstrate a profound ability to manipulate that logic towards new, radical potentialities.

Notes

ⁱ To be clear, this is not the liberalism commonly understood in the popular American political vernacular, but rather classical economic liberalism theorized by enlightenment thinkers.

ⁱⁱ Brown, Wendy. *American Nightmare: Neoliberalism, Neoconservatism, and De-Democratization*. Democracy (2016): 693.

ⁱⁱⁱ Foucault, Michel. *Politics and Reason*, in *Michel Foucault: Politics, Philosophy, Culture: Interviews and Other Writings, 1977-84*, ed. L. Kritzman (New York: Routledge, 1988).

^{iv} Hardest, Larry. *Explained: Neural Networks*. MIT News. April 14, 2017.

^v Pasquinelli, Matteo. *Abnormal Encephalization in the Age of Machine Learning*. E-flux – Journal #75 September 2016.

^{vi} Many data scientists and technologists I have spoken with claim the future of machine learning is to use, "less biased," data to make algorithms more, "value neutral," in their decision making. I am unconvinced by this; to remove the bias from data about humans is, to my mind, a contradiction of terms. How could we collect data from and about human society that does not encode its tendencies? To believe there exists unbiased data is to make claims towards fundamentally objective truths, which is highly questionable and suspect, especially considering those making such arguments are often the ones most benefitting from the proliferation of these new algorithmic tools.

^{vii} Harvey, David. *The 'New' Imperialism: Accumulation by Dispossession*. Socialist Register 40: 63-87. 2004.

^{viii} Wang, Jackie. *Carceral Capitalism*. South Pasadena, CA: Semiotext(e), 2018

^{ix} Amazon Go, <https://images-na.ssl-images-amazon.com/images/I/F1+oVK+cVNS.mp4>

^x Srnicek, Nick. *Inventing the Future: Postcapitalism and a World without Work*. Verso, 2016.

^{xi} Ptak, Laurel. *Wages For Facebook*. <http://wagesforfacebook.com/>

^{xii} Greenberg, Andy. "U.S. Government Requests For Google Users' Private Data Jump 37% In One Year." Forbes. Forbes Magazine, 2012. Web.

^{xiii} Hu, Tung-Hui. *A Prehistory of the Cloud*. Cambridge, MA: MIT Press, 2015.

^{xiv} Colburn, Timothy; Shute, Gary. *Abstraction in Computer Science in Minds and Machines*. 17 (2): 169-184. 2007.

^{xv} Mills, Mark P. *The Cloud Begins with Coal: Big Data, Big Networks, Big Infrastructure, And Big Power*. 2013.

^{xvi} U.S. DEPARTMENT OF DEFENSE *Project Maven to Deploy Computer Algorithms to War Zone by Year's End*. 2018.

^{xvii} Fang, Lee. *Amazon Promises 'Unwavering' commitment to police, military clients using AI technology*. The Intercept. July 30, 2018.

^{xviii} H. Bidgoli, ed. *The Internet Encyclopedia*. John Wiley & Sons. 2004.

^{xix} Bridle, James. *New Dark Age: Technology, Knowledge, and the End of the Future*. London: Verso, 2018.

^{xx} Critical Art Ensemble. *Disturbances*. London: Four Corners Books. 2012

^{xxi} Paglen, Trevor. "Invisible Images (Your Pictures Are Looking at You)." The New Inquiry. N.p., 08 Dec. 2016. Web.