

Navigating Neoliberalism: Political Aesthetics in an Age of Crisis¹

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Abstract

The continuing economic crisis that began in 2007 has left a vacuum at the centre of economic ideology. While the dominant neoliberal ideology of the past four decades has become a zombie – long dead, but still wreaking havoc – there has been a palpable dearth of alternatives. The contention of this paper is that a major reason for this absence of alternatives lies in the specific nature of the economy as an object. As a complex, non-empirical system, the economy extends itself beyond the finite capacities of human comprehension. The complexity and abstraction of global finance requires a suitably complex and abstract form of aesthetic representation in order to modulate our access to it. What is necessary to represent the economy is, first, the effective use of mathematical and technological tools to extend cognition beyond the sensible parameters of the human. An aesthetics of the sublime emerges here, with big data, complexity, and multi-causal relations converging on representations of the economy that are themselves beyond human comprehension. Yet to complete the representation of the economic object what is necessary is, second, an aesthetics of the interface which modulates the relationship between the technological representation of the complex economic object and the human cognitive system. It is in these two mediation points that art can serve a significant political function – by contributing to the cognitive and sensible leverage over economic complexity.

1 / Introduction

What I want to talk about today is the odd and contingent conjunction of a few strands that dominate the contemporary world – and the place that art has in this situation. In the first instance, there is the fundamental ungrounding that pervades the world today – that is to say, the collapse of neoliberal economics and its attendant hegemony over the social imagination. It is difficult to overestimate how significant this shift is, even if its full consequences have yet to be felt. This leads to the second important strand in the contemporary world: the abyssal void at the heart of alternative

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political thinking. While neoliberalism has seen its foundations collapse under the weight of its own contradictions, the ground below it remains uninhabited. Movements like Occupy have arisen, but have promoted woefully inadequate localist and horizontalist solutions to global problems. In Jodi Dean's pithy critique, "Goldman Sachs doesn't care if you raise chickens." Meanwhile, mainstream alternatives have remained wedded to obsolete visions of a capitalist golden age – advocating a return to the classical Keynesian economics of the 1960s. This of course ignores the changes in social composition, the changes in technological infrastructure, and the changes in the global balance of power.

I want to argue today that these two strands – the collapse of neoliberalism and the absence of alternatives – can find their resolution in a third strand, which is a particular emerging approach to aesthetics. What is needed today is a reconfiguration of the basic political aesthetic taken up by leftists. More specifically, what is needed is an extension of our capacities for sensible imagination via the mediation of technological augmentations. In order to develop an alternative that is adequate to today's complex societies, those on the left need to marshal the latent capacities of technology and science in order to envision a better future.

This is necessary, first and foremost, in coming to grips with the strange non-object that is contemporary capitalism. The economy is not an object amenable to direct perception. It is distributed across time and space; it incorporates property laws, biological needs, natural resources, technological infrastructures and more into its eclectic assemblage; it involves feedback loops, multi-causal events, sensitivity to initial conditions, and other complex system characteristics; and last, but not least, it produces emergent effects that are irreducible to its individual components. As a result of this, despite everything written about capitalism, the political left still does not understand capitalism. The question to be tackled here is how does one aesthetically represent a complex, structural entity like neoliberalism? Since it evades any direct perception, our vision of the economy can only emerge from the augmentation of the human cognitive system with various sociotechnical apparatuses.

2 / Cognitive Mapping and the Aesthetics of the Sublime

This gets to the heart of what Fredric Jameson calls 'cognitive mapping'. According to him, the left lacks 'cognitive mapping' – the means to make our own world intelligible to ourselves through a situational understanding of our own position.² Jameson draws upon the urban theorist, Kevin Lynch, who argues that in designing urban spaces one must take into account how people navigate their way around cities. In encountering a new city, the individual is left without any cognitive map of the space and is forced to develop one through habit. As Lynch argues, the urban designer can assist this process by strategically situating landmarks and other easily recognizable symbols in order to provide the grounds for the development of a cognitive map.³

In Jameson's work, this idea of cognitive mapping is taken up not as the individual's relation to a city, but rather as their relation to an entire social system. As he states, the function of cognitive mapping is "to enable a situational representation on the part of the individual subject to that vaster and properly unrepresentable totality which is

² Jameson, "Cognitive Mapping."

³ Lynch, *The Image of the City*.

the ensemble of society's structures as a whole."⁴ In charting through a loose set of historical periods from national to imperialist to globalised capitalism, Jameson argues that at one time the nature of capitalism was such that one could potentially establish a correspondence between our local phenomenological experiences and the economic structure that determined it. We could, in other words, establish a cognitive map of our economic space, thereby making intelligible the world around us. With the rise of globalisation, however, Jameson claims that this is no longer the case. We can no longer simply extrapolate from our local experience and develop a map of the global economic system. There is a deficiency of cognitive mapping, that is to say, there is an essential gap between our local phenomenology and the structural conditions which determine it.

This separation between experience and the system within which we operate results in increased alienation – we feel adrift in a world we don't understand. In this regard, Jameson notes that the proliferation of conspiracy theories is partly a cultural response to this situation. Conspiracy theories act by narrowing down the agency behind our world to a single figure of power (whether it be the Bilderberg Group, Freemasons, or some other convenient scapegoat). Despite the extraordinary complexity of some conspiracy theories, they nevertheless provide a reassuringly simple answer to 'who is behind it all'. They, in other words, act precisely as a cognitive map.

The significance of cognitive mapping is that it provides a means to navigate a complex system. Jameson goes so far as to claim that "without a conception of the social totality (and the possibility of transforming a whole social system), no properly socialist politics is possible."⁵ With globalised capitalism having become unbound from any phenomenological coordinates, this possibility for a socialist politics has become increasingly difficult. At the heart of the problem is that "the economy is not found as an empirical object among other worldly things[.] [I]n order for it to be 'seen' by the human perceptual apparatus it has to undergo a process, crucial for science, of representational mapping."⁶ Like many other objects of science, the economy evades any sort of direct perception. The health of an economy is not a physical entity in the world; instead it is a complex and constructed piece of information – dependent on both material processes in the world as well as socially and politically charged choices about how to measure and calculate it. What is needed for cognitively mapping the economy is therefore the construction of an entire sociotechnical system for observing, measuring, classifying, and analysing it. Instead of direct perception of the economy, perceiving it as a complex system is more akin to a symptomology. In the exact same way that a doctor examines a patient's symptoms to determine the nature of their disease, so too are various economic indicators used to try and discern the underlying health of the economy. There's the mainstream symptoms most are familiar with (things like GDP, jobs numbers, interbank interest rates, etc.) along with more arcane symptoms that its practitioners swear by (such as electricity usage, shipping costs, etc.).

It's important here to point out how different this is from typical leftist approaches to studying the economy. Traditionally, leftist accounts have taken two broad approaches. One works on a partial perspective, making critical interventions into debates surrounding unemployment, inequality, welfare reforms, trade laws, etc. The other approach takes a properly systematic perspective, but almost always shirks any

⁴ Jameson, *Postmodernism: Or, the Cultural Logic of Late Capitalism*, 51.

⁵ Jameson, "Cognitive Mapping," 5.

⁶ Buck-Morss, "Envisioning Capital: Political Economy on Display," 440.

statistical and mathematical tools. The systemic approach, amongst leftists, is usually grounded upon dialectics and is epitomized by Marx of course, but more recently by David Harvey's work. The problem is that dialectics is no longer – if it ever was – a suitable tool for understanding the systemic nature of capitalism. Certainly in the wake of Deleuze's work, it is increasingly difficult to posit contradiction as the driving mechanism of history. Instead, an ontology of feedback loops, emergent effects, and contingent outcomes is necessary to understand the contemporary world.

In that regard, the key means to understanding the economy is through technical tools such as computer algorithms, simulation models, econometrics, and other statistical analyses. It is these sorts of cognitive prostheses that allow for the perception of otherwise invisible systems like capitalism. We have to take seriously here Friedrich Kittler's point that "perceptible and aesthetic properties are always only dependent variables of technical feasibility."⁷ The continued expansion of technology is a call to expand our cognitive mapping of economic systems. In contemporary society, the technical infrastructure for this project is rapidly increasing. We are increasingly embedded within a massive network of various sensors and databases that record more and more of our existence. Mobile phone patterns are tracked via GPS, online behaviours are recorded throughout every step, social media conversations are mined for their semantic content, and movements like the quantified self (QS) community are turning these technologies inwards to the body. And commensurate with this expansion of information is the rise in intellectual and technological means to analyse big data. Social network analysis is providing new insights on how memes, behaviours, desires, and affects diffuse throughout our personal connections. Agent-based modelling is giving rise to new insights about how organized behaviours emerge from the chaos of individual actions. And predictive algorithms use past actions as the basis for strikingly accurate predictions about future behaviours. All of these sociotechnical assemblages can be mobilized to generate new insights on the functioning of neoliberal economies.

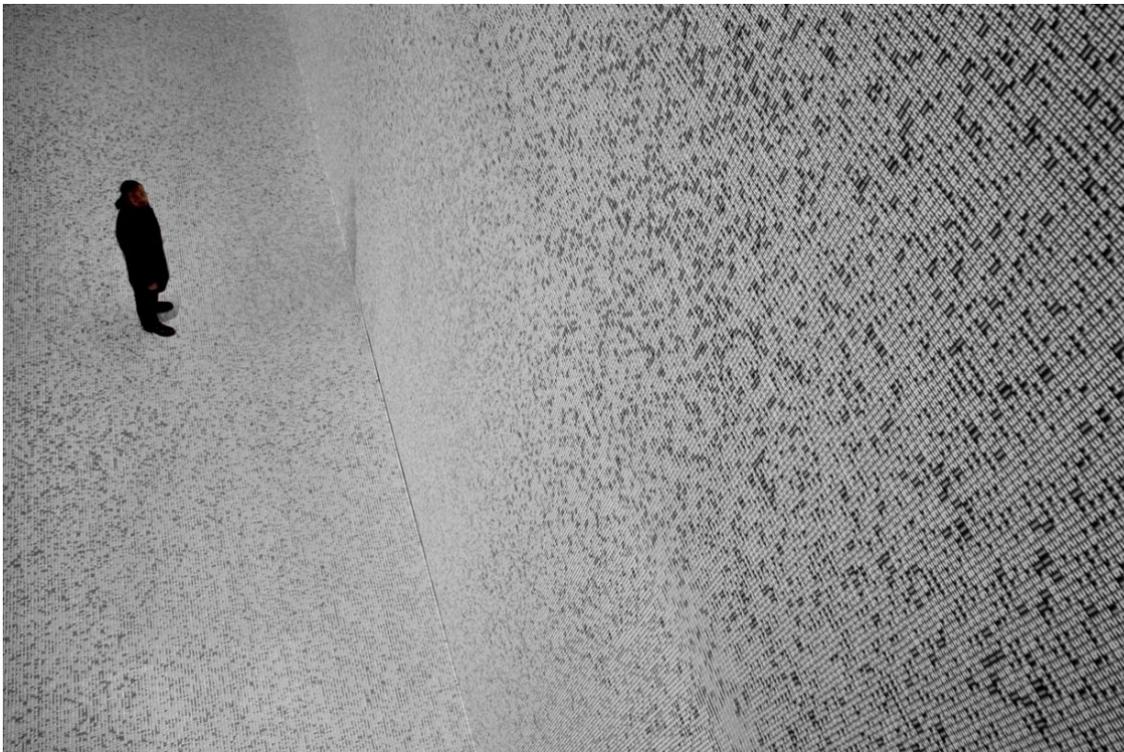
But what is needed is more than just a mathematical representation of these complex systems. In a question and answer session after his cognitive mapping presentation, Jameson is asked a particularly important question about where aesthetics fits into the concept of cognitive mapping. I apologize for the long quote, but his response is key for understanding where art can make a political intervention:

“The question of the role of the aesthetic as opposed to that of the social sciences in explorations of the structure of the world system corresponds, for me, to the orthodox distinction (which I still vaguely use in a somewhat different way) between science and ideology. My point is that we have this split between ideology in the Althusserian sense – that is, how you map your relation as an individual subject to the social and economic organization of global capitalism – and the discourse of science, which I understand to be a discourse (which is ultimately impossible) without a subject. In this ideal discourse, like a mathematical equation, you model the real independent of its relations to individual subjects, including your own. Now I think that you can teach people how this or that view of the world is to be thought or conceptualized, but the real problem is that it is increasingly hard for people to put that together with their own experience as individual psychological subjects, in daily life. The social sciences can rarely do

⁷ Kittler, *Optical Media*, 222.

that, and when they try (as in ethnomethodology), they do it only by a mutation in the discourse of social science, or they do it at the moment that a social science becomes an ideology; but then we are back into the aesthetic. Aesthetics is something that addresses individual experience rather than something that conceptualizes the real in a more abstract way.”⁸

Aesthetics, therefore, is what sensibly mediates between individual phenomenology and our cognitive maps of global structures. Yet here I think we can parse Jameson’s conception of aesthetics into two parts by drawing a distinction between the aesthetics of the technical sublime and the aesthetics of interfaces. That is to say, between big data as impenetrable noise and big data as cognitively tractable. The act of building mediators between these is precisely one of the most important areas where political art could be situated today. The aesthetics of the technical sublime render complex systems in a way which encompasses them but with a negligible reduction of information.



Here, Ryoji Ikeda’s work on dataphonics is exemplary of this approach. Wielding massive datasets and numbers that defy human comprehension, Ikeda has built installations and soundscapes that operate at the very boundaries of human sensibility.⁹ The sonic frequencies of his music often just barely enter into the range of human auditory capacities, and his visual installations are designed to overwhelm and incapacitate. The technical sublime emerges here: where perception recoils at an incomprehensible vastness whilst cognition and reason sits back and black boxes it. The sublime here is the parallax tension between a horror at the level of sensibilia and

⁸ Jameson, “Cognitive Mapping,” 7.

⁹ <http://observer.com/2011/05/infinite-quest-ryoji-ikeda-wants-to-disappear/>

conceptual understanding at the level of cognition. Yet this is precisely the problem with a simple privileging of the technical means to understand systems like neoliberalism. There's a real risk that one remains at a level of accelerating information that renders the world just as unintelligible as it is without digital mediation.

3 / The Problem of the Future

In itself therefore, cognitive mapping only provides an aesthetics of the technical sublime - it awes us with overwhelming amounts of data, but provides little cognitive purchase on the underlying mechanisms. We're left with, at best, being physiologically manipulated into Stendhal syndrome. Cognitive mapping in itself provides us with no cognitive and sensible leverage over our future. In particular, it remains incapable of overcoming the contemporary dystopian vision of the future. "The future becomes a threat when the collective imagination becomes incapable of seeing alternatives to trends leading to devastation, increased poverty, and violence."¹⁰ The entrenched nature of global capitalism - the zombie neoliberalism stumbling on even after its death blow - rends the future into an implacably dystopian time. Climate change, resource wars, social conflict, rising inequality, and greater militarization are all the phenomenological givens of the future.

Yet as Franco Berardi highlights, the future is itself a cultural construct. Prior to the emergence of modernity, time was construed as a fall from a past utopia. With modernity though, this relation was reversed and the future became the locus of progress and utopian dreams.¹¹ "The future," Berardi writes, "is not a natural dimension of the mind. It is a modality of projection and imagination, a feature of expectation and attention, and its modalities and features change with the changing of cultures."¹² Our own age has rendered the idea of progress as naively idealistic. Postmodernism has become the common sense of the average person, whether explicitly recognized or not. We live in an age where the future has shifted from utopian to dystopian, where the Soviet rallying cry of "Storm the heavens!" has been tossed aside. In its place, we're left with a future of exhaustion. Exhaustion of natural resources, exhaustion of productive ventures, exhaustion of our mental well-being.¹³ Perhaps surprisingly, the notion of a progressive future has waned even within the parameters of capitalist realism. Debt here serves as the primary indicator of the capitalist belief in a better future - debt is only repayable if one believes that the future will be better. The worldwide collapse in lending - with corporations and banks hoarding record amounts of money - is therefore indicative that even capitalist realism has lost its sense of the future.

This implosion of the future makes itself felt affectively as political impotence. Incapable of extrapolating patterns and cognitively overwhelmed by big data and complex systems, agency becomes reduced to a mere refusal at best. The attempted negation of the existing order - finding its physical embodiment in the camps of the occupy movement most recently - attempts to stand steadfast against the momentum of

¹⁰ Ibid., 59.

¹¹ Berardi, *After the Future*, 17-18.

¹² Ibid., 24-25.

¹³ Ibid., 45-46.

the system. Yet inevitably the meek act of refusal is exhausted and the system plods on again.

This is where an aesthetics of the interface makes a key intervention. The modernist image of a progressive future was premised on both the capacity to extrapolate and forecast the future, as well as the belief in the human capacity to manipulate the direction of history.¹⁴ We've now converged on a widespread acceptance of the neoliberal premise that the world is too complex to ever plan, manipulate, accelerate, modify, or otherwise intervene in. Common sense therefore has it that the market is the best we can hope for. There is no way to manipulate a complex system, so why bother? Common sense has become lost in the complexity of the world without a cognitive map to navigate it. Yet if an aesthetics of big data is incapable of rendering this complexity tractable, then what is necessary is a transformation of the aesthetic sublime into an aesthetics of the interface. The latter indexes the mediation between big and complex data on the one hand, and our finite cognitive capacities on the other. In this space, art can become a weaponized political tool.



¹⁴ Ibid., 51.

4 / Machine Perception

It's at this point that the recent artwork being done under the loose rubric of 'the new aesthetics' can supplement the technical means of cognitive mapping. Cognitive mapping can give the new aesthetics its political impetus and technological basis, while the new aesthetics can provide cognitive mapping with the artistic and sensible means to accomplish its political goals. I assume most people know of it, but broadly speaking, new aesthetics has been a loose movement associated with integrating digital and technological perception into art. In one sense, this has always been the case with art – the camera being the most obvious example of a disruptive aesthetic technology. Yet at least some of what is being done under the rubric of the new aesthetics has its own particularity that is irreducible to these historical precursors. In his long-form essay on the topic, Bruce Sterling recites the various actualizations of the new aesthetic:

“Information visualization. Satellite views. Parametric architecture. Surveillance cameras. Digital image processing. Data-mashed video frames. Glitches and corruption artifacts. Voxelated 3D pixels in real-world geometries. Dazzle camo. Augments. Render ghosts. And, last and not least, nostalgic retro 8bit graphics from the 1980s.”¹⁵

On one level, this type of art is arguably mundane. The generation emerging into political activity at the moment is a generation weaned on digital media and with their sensibility fully embedded in screen interfaces.¹⁶ But – and this is what distinguishes the art being done under the new aesthetic label from past technologically-mediated artforms – “digital image-processing coincides with the real [...] precisely because it does not want to be a reproduction like the conventional arts.”¹⁷ It melds directly with reality in such a way that we now speak of 'augmented reality', whereas previous art had been about insights on reality, our escapes from reality, or simple representations of reality. But today, our perceptions of the world are increasingly overlaid, augmented, distorted, and extended by digital images.

For the new aesthetics though, the issue with this ubiquity of digital imaging is that the new aesthetics risks simply making explicit what many already know. The tendency, therefore, has been to try and recuperate a 'weirdness' in the new aesthetic in order to unsettle conventional understandings. As Sterling makes clear though, there's a problem with an over-reliance on weirdness as an aesthetic attribute. Weirdness is always relative, and inevitably, temporary.¹⁸ Glitch art, for instance, appears weird to many at first, but quickly transforms into the mundane. For the new aesthetics to be of lasting significance, it needs to push in a different direction beyond just the weird. So if the new aesthetics borders on the mundane at times, and relies too heavily on weirdness at other times, then what can be done to make this artistic medium novel and interesting?

It seems to me that new aesthetics, at its best, is about the expansion of sensible possibilities beyond human limitations. It is about fully accepting that the divide between the digital and the real is meaningless and using this collapsing division as the impetus to

¹⁵ Sterling, “An Essay on the New Aesthetic.”

¹⁶ Berardi, *After the Future*, 131.

¹⁷ Kittler, *Optical Media*, 228.

¹⁸ Sterling, “An Essay on the New Aesthetic.”

explore new landscapes. Part of this sensible expansion also has to move beyond solely the visual and begin to incorporate the tactile. As gestural behaviours become increasingly central to our interaction with digital media (just think of the rise of touch-screen phones and the shift to touch-optimized operating systems), the aesthetics possibilities of these interactive mediums is shifting away from the traditional visual orientation. To return to the cognitive mapping question, I think that the artists exploring these new mediums and possibility spaces are the ones who are best situated to answer the questions of how to represent big data, computer simulations, and other data visualizations. It's the practice of these sorts of artists that needs to be examined and supported in order to overcome the limits of the technical sublime.



Understanding new aesthetics as creating sensible possibilities beyond standard human ranges also helps to clarify the stakes between two opposing criticisms of the movement. The first is one of the core critiques put forth by Sterling - namely that the new aesthetics ignores its human components by misrecognizing the source and instrumentality of the various technological mediations. Drone-vision is part of a larger military-political assemblage; surveillance and tracking algorithms are the products of a particular type of state; glitches and low-resolution images stem from a very human desire for nostalgia. Recognizing the human component - which is also the political component - will integrate the new aesthetics movement into a much more significant world. New aesthetics cannot simply ignore the users of technology - in doing so, it falsely presents apolitical images and shirks its own potential.

But then what to make of Ian Bogost's call to push new aesthetics in weirder and less human directions? For Bogost, the new aesthetics is still human, all too human. He writes,

“A really new aesthetics might work differently: instead of concerning itself with the way we humans see our world differently when we begin to see it through and with computer media that themselves “see” the world in various ways, what if we asked how computers and bonobos and toaster pastries and Boeing 787 Dreamliners develop their own aesthetics. The perception and experience of other beings remains outside our grasp, yet available to speculation thanks to evidence that emanates from their withdrawn cores like radiation around the event horizon of a black hole.”¹⁹

While ostensibly opposed to the idea of politicizing new aesthetics, in fact Bogost’s prescription can be productively combined with politics. One needs only to recognize how technology is already extending perceptual capacities in order to render the alien phenomenology of objects commensurate with political action. Surveillance cameras that track individuals via the invisible spectrums of light; military technology that transforms heat into visual forms; research into our unique olfactory signatures; and emerging technology that wraps light around objects and camouflages weapons from satellites, for instance. This is all political action that already operates outside the human perceptual system. The weirdness of object perception is not, therefore, opposed to the political nature of machine vision. And the new aesthetics, as the expansion of sensible possibilities via new digital technologies, is simply the artistic movement that is exploring this conceptual and sensible space.

So how then does this relate to cognitive mapping? As we saw earlier, understanding a non-object like neoliberalism requires coming to terms with elements that strain the bounds of typical cognition. One solution might be to extend our own internal capacities, say via pharmaceutical enhancements. But presently this offers only a minor adjustment, and certainly nothing sufficient for these political purposes. So the only remaining option is to design interfaces in such a way that they offer the possibility of manipulating complex systems. We know from reading any contemporary neuroscience that consciousness operates by simplifying the environment; but the informational overload we face now is an entirely new mode of complexity in our environment – it’s not just a sensorial complexity, but also a properly cognitive complexity. The aesthetics of the interface is the mode of operationalizing this complex knowledge into local phenomenologically-amenable representations. And the work being done under the term ‘the new aesthetics’ is the creation and discovery of new ways of bringing about machine perception.

5 / Designing Futures

An important space of aesthetic exploration is therefore a conjunction of new aesthetic paradigms combined with the cognitive mapping tools provided by science and technology. Design – as the conjunction of aesthetics, pragmatism, and technology – becomes a key node for overcoming our current dystopia. In an age plagued by chaos – what Franco Berardi calls “a complexity that is too dense, too thick, too intense, too speedy, too fast for our brains to decipher” – the aim of political aesthetics should be to try and grasp these accelerating lines that compose the world, and to turn them into an

¹⁹ Ibid.

intelligible, tractable plane of consistency.²⁰ This form of aesthetics needs to be oriented towards the practical, taking into account the cognitive and material affordances of the human body. We can think here of the significance of various interface mechanisms used in everyday technologies such as smartphones. The gestures used to navigate around these digital landscapes are the subject of billions of dollars of investment, research, and litigation. This money is spent precisely in order to bridge the gap between technological augmentations and the fleshy body of the human, welding the two into a single unit. Similar aesthetic choices are the subject of a fascinating recent book on the design of slot machines in casinos. Here, the design of interfaces takes on a sinister quality insofar as their purpose is to ensnare susceptible individuals and exploit their chemical addictions.

“For a while, ergonomics was economics. Then high-priced animators were hired to design pleasing sounds and animations to reward winners. But some players were annoyed that the animations were too slow, so the animations were dropped. Play sped up. Faster play was great for increasing dopamine delivery to the brain. It also tended to speed players toward the end of their credits, which lowered their loyalty to particular machines and the casinos that housed them. Chip-driven gaming allowed designers to respond to this problem by tweaking the programs so that frequent small wins (often less than the cost of playing a single hand) kept dopamine surging while players’ cash trickled steadily into casino coffers.”²¹

This neural, chemical, visual manipulation of the interface demonstrates the capacity for interfaces to be modulated and oriented towards particular political ends (in this case, profit). Simply put, interface design has real behavioural effects on individuals. Yet in the case of a complex system, the dream of a God-like panoptic interface must be rejected. Instead, interfaces must act to restrict information to a crucial set of variables, or to a discrete subset enabling ready interaction. This is especially pertinent for acting upon complex reflexive megasystems such as the global financial system. In other words, complex systems require symptomologies – the economy is understood not as a sensible object, but instead as a series of economic indicators. The same goes for the climate system – understood in terms of specific climate indicators (CO₂ concentrations, temperature averages, Arctic ice levels, etc.).

How then do these very specific and personal forms of interface design relate to larger questions about global capitalism? To give a concrete example of what is being suggested here, there’s perhaps no better instance than Project CyberSyn in Chile during the 1970s. As its preeminent historian notes, Project CyberSyn “was conceived as a real-time control system capable of collecting economic data throughout the nation, transmitting it to the government, and combining it in ways that could assist government decision-making.”²² The elaborate technical infrastructure underpinning this system was ultimately oriented towards a single control room capable of overseeing the entire economy.

²⁰ Berardi, *After the Future*, 160–161.

²¹ Noren, “Can Objects Be Evil? A Review of ‘Addiction by Design’.”

²² Medina, *Cybernetic Revolutionaries: Technology and Politics in Allende’s Chile*, x.



“On one wall a series of screens displayed economic data from the nation’s factories. A simple control mechanism consisting of ten buttons on the armrest of each chair allowed occupants to bring up different charts, graphs, and photographs of Chilean industrial production and display them on the screens. On another wall a display with flashing red lights indicated current economic emergencies in need of attention; the faster the flashes, the more dire the situation. A third wall displayed an illuminated color image of a five-tiered cybernetic model based on the human nervous system.”²³

Cybersyn incorporated all of the aspects discussed here. It used the most advanced cybernetic theories, along with sophisticated technology, in order to produce a symptomatic representation of the economy as a complex system. It then took this raw data and transformed it into a particular design aesthetic that was oriented towards gaining pragmatic leverage over the complex system. And it did all of this through visual means, through architectural choices, through gestural designs, and through knowledge of the limits of human thought. Moreover, unlike somewhat similar Soviet systems from the 1950s, the Chilean system implemented a radical vision of society into its technological infrastructure. As opposed to the top-down centralized control of the Soviet systems, the Chilean system incorporated decentralized decision-making capabilities directly into Cybersyn, effectively welding a novel form of communism into its material infrastructure.

This desire for real-time monitoring and interaction with economies is not solely a communist dream either. Modern central banks carry out the same operations: they rely on all the indicators available from the economy in order to devise their monetary

²³ Ibid., 1.

policies. Yet in a world permeated by mineable data, central banks are now turning to increasingly fine-grained and more real-time indicators. The US Federal Reserve is employing sentiment analysis to mine the content of social media and generate an image of the consumer's mood. The Israeli central bank is taking real-time Google search data as the basis for understanding how the economy is functioning. So, for instance, a spike in searches for 'unemployment benefits' suggests the economy is dipping down – and this knowledge is becoming a real-time factor in the decisions made at the commanding heights of modern capitalism. In all these cases, from Cybersyn to the Federal Reserve, what is at issue is gaining a machine-mediated perception on a complex system.

It is through this that, first, leftists can begin to navigate the conceptual and practical world of neoliberalism. This means more effective analysis of where leverage points are, for instance. This piece here is Lombardi's so-called 'conspiracy art', which attempts to envision the social networks amongst the power elite of the world. Other examples include social network analysis of interlocking directorates, and mappings of 'capitalist power' which trace out relations of ownership. There's also the example of discerning the nodal points in shipping networks – turning the chaos of globalized trade into something amenable to political action. The second outcome of cognitive mapping and an aesthetics of design is the construction of alternative economic systems. One of the first attempts to cognitively map the economy was Francois Quesnay in 1758, who highlighted the systematic nature of the economy and the interrelations between landowners, farmers, and peasants.²⁴ Today, though, leftist organizations like the New Economics Foundation have extensively built on this systematic insight to create computer models of the economy that aim to give support for leftist political goals. Lastly, with this sort of approach, I think we can begin to reverse the trend whereby the future has been painted as dystopian. Art, here, becomes the envisioning of a future, rather than a retrospective on the past. As Berardi says, "The repertoire of images at our disposal limits, exalts, amplifies, or circumscribes the forms of life and events that, through our imagination, we can project out into the world, put into being, build, and inhabit."²⁵

So in conclusion, it seems to me that in an age of immense complexity, one of the primary means to overcoming the neoliberal assumption about the impossibility of manipulating this complexity is to merge art practice, digital simulations, and technological infrastructures into a project that aims to represent the non-object that is neoliberalism.

²⁴ Buck-Morss, "Envisioning Capital: Political Economy on Display," 440.

²⁵ *Ibid.*, 133.

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