Discreet Machines of Desire: from Edward Bernays to Robert Oppenheimer

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Bringing *technology* (with all of its knotted histories and present tense complexities) into direct proximity with *desire* (an endless subject of human imagination and inquire) sets in motion an unfolding spectrum of possible interpretations. Within this spectrum of interpretations I would perhaps offer two formulations, each with their own consequence and trajectories. First, and perhaps most obvious, the question speaks to our desire for technology: a desire that extends beyond 'wanting' the next new thing, 'hoping to get this,' or 'being able to do that' and soon. Our desire for technology expresses a fundamental human will for agency and 'extension' though instrumental innovation. This formulation of the question expresses technology as an outward extension of our will and specifically the will to instrumentally articulate our external environment. A second formulation of the question arises from a simple re-consideration of the direction of instrumental extension. We can ask: is the direction of technological extension always outward, always toward our external geographies? Perhaps the first formulation that recognizes our desire to extend ourselves through technology also permits the inverse; that as multiple forms of technological extension order our external geography, they are simultaneously folding back upon us, extending their ordering structures into our internal geographies. In this formulation, human agency is not only acting through technology but is acted upon by technology and, consequently, technological agency itself is acting through the human condition. This reversal can lead us to ask if technology has a desire or will of its own? This does not, by definition, mean the sentient autonomous *will* so often characterized in science fiction movies, but perhaps a more subtle will found in the enigmas of embodied experience of instrumentality. Much of our experiential geographies, internal and external, are articulated, ordered and crystallized by various forms of instrumental extension. This extension does not stop at the boarders of our senses. The porosity of being offers no such shelter. Long before entering into all of the cognitive complexities of say; human neurologic traffic as it relates to something as vast as the internet today, in the simple act of moving our arm to lift a pencil we can recognize that the pencil's particular characteristics order our actions. As we move the pencil, the pencil moves us, as we articulate thought through a pencil, the movement and gesture of our hand and our thoughts are being articulated by the particular nature of the pencil. To a large degree our anticipation of this reciprocity orders our sense of agency. In this sense, we are acted upon by the potential agency created by the pencil. This double (outward and inward) directionality of instrumental extension begins to expose the woven circular knots of Technology and Desire. As our desire for technologies fuels outward-expanding spirals, technologies inversely construct inward-expanding spirals. These double spirals of technology and desire are knotted and woven into our world and our experience of it to such an extent that it is likely impossible to separate them.

In this essay, I hope to illuminate these two formulations of the question of Technology and Desire by focusing on two seminal figures of the 20th century; Robert Oppenheimer, the creator of the first Atomic bomb and Edward Bernays the father of modern propaganda and public relations. Each of these figures unleashed technologies of such profound impact on our world that it is not an exag-

geration to say that we live in the shadow of Oppenheimer and Bernays.

In order to chart the impact of these two figures and their technologies requires a brief discussion of financial instruments. The instruments of capital exchange are at the core of both of their projects and provide a lens through which to view them. While a comprehensive overview of the vast intricacies of our current financial markets offers valuable insights, for the purposes of this discussion we will focus on the basic algebra of debt, equity, and compound interest; and their direct links to the human condition of: Being in Time.

The Algebra of Capital

Consumption endangers resources. Scarcity of resources endangers consumption. The metabolic cycles of resource and consumption are so fundamental to life, of such value to our existence that maintaining their rhythm is (and has always been) a primary human activity. The cycles of the metabolism act as a kind of temporal gravity against which we structure a web of instruments to mitigate the risks of breaking these temporal cycles. Every civilization has developed modes of navigating the metabolic temporal cycles; from the pre- historic instruments of hunter-gatherers to the huge revolution of agriculture, locating, storing and distributing fuel for human metabolism has been a central human activity. In our epoch, the primary instruments of navigating these endeavors take the form of financial instruments. If we look at the basic algebra of capital we recognize that it is directly grounded in the mediation of consumption in time. If we simply examine the use of currency, we can ask: what is that 20-dollar bill in our pocket doing? Why do we have it (or desire to have it)? And the answer is surprisingly simple: it is waiting, holding value in its potential state, deferring its exchange in anticipation of our consumption; it is deferring consumption. Later, we can all go out and exchange our currency for whatever form of consumption we please. We don't have to decide now but we know that in a future moment of our choosing, the currency in our pocket will be accepted in exchange for a consumable. This knowledge has a profound effect on our sense of well-being in time. Without the instruments of currency, our metabolism would be at risk and it would impair our ability to construct the temporal bubble, holding open the space in time to read this essay. This concept of deferred consumption is the primary function of currency, and it has a direct impact on the capacity of capital instruments to mediate time. We find the inverse temporal instruments in debt or credit, which accelerate consumption, allowing us to consume that which we don't have. Credit pulls future value or energy to the present to be consumed. We have to ask, "Where does this value or energy come from?" And the answer is one of the key linkages between the instruments of capital, and our temporal experience. It comes from an imagined future, an anticipation of the next day, week, year or decade. Credit is an expression of the fundamental anticipation that there is "more to come". The origin of the word credit is the Latin "Credere" which means "to believe". Think of someone who is credible; they have credibility (they may even have good credit). Credit is literally the belief that tomorrow will happen and that these futures contain the possibilities to generate value that can be brought to the present. Loans pull future anticipated value to the present for consumption. Credit is a direct expression of our belief in imagined futures. As such, the total aggregate credit in the system at any given present is an expression of the outward edge of our imagined time horizon. And more, affording credit to specific endeavors is an expression of a belief in the future trajectories of that endeavor. Of course, the credit itself provides fuel to these endeavors driving them into the future. Meaning, credit not only defines the outward edge of our time horizons but orders and articulates the specific trajectories as we move into the future. By identifying future risks and opportunities from the present, and amplifying or diminishing them through the instrument of credit, we articulate the future. These two concepts of deferred consumption and debt or credit are *time promises* they act as valves compressing or extending time. These tools do not remain external; they operate on an instinctual level allowing us to feel at ease providing a sense of temporal shelter, a sense of well-being. Modern banking has developed a complexity and intensity that has arguably positioned capital as the primary ground for our cognition of time.

The Shadow of Robert Oppenheimer: Umbra and Penumbra

The Manhattan Project; the building of the first atomic bomb was perhaps the most seminal event

of the 20th century. Linking capital, politics, technology, life, and death, the 'Manhattan Project' simultaneously produced nuclear weapons and information technologies. The mathematical demands of splitting the atom led to the birth of digital computation. The complexity of atomic catastrophe required: Numbers that could make numbers. Perhaps the first verifiable act of alchemy, Robert Oppenheimer's faustian bargain of number, substance, and energy launched a radically new Janus face of capital and technology.

I have often thought of the odd symmetry of the Sun (in the sky) being an enormous life-giving fusion event, and fragments of the sun on earth (nuclear weapons) being the direct inverse, enormous life taking fusion events. This vast arc contains a difficult paradox toward imagining the globes resources. To estimate the total wealth of the planet, economists must register the planet in its entirety as a closed system with no addition or removal of any resources into or out of the system, with one detectable exception; the energy of the sun. This gigantic nuclear fusion event is ultimately the only external input that continually adds to the resources of the planet. If the sun is thought of as a source, at the other end of the economy is debt. The cost of debt is not a source but a sink. I find it remarkable that the sum total of the world's debt is secured in a direct line by nuclear fusion devices. World trade, like many forms of consensus, contains agreements that are enforceable; this means that they are maintained by force. Individual debt, credit, and collateral is aggregated into institutional debt, credit, and collateral, and in turn into larger units of aggregation until we consider central banks and governments and their debt, credit, and collateral. Debt requires security. Ultimately, the "full faith and credit" of a sovereign state is backed by its military might and military alliances formed to protect it. Behind the banks are the tanks, and behind them larger weapons, and ultimately the most powerful weapons: nuclear fusion devices, or devices that are created to duplicate what goes on in the stars such as our sun.

In a chilling symmetry to the gift of the sun, these technological fragments of the sun on earth are the collateral, at bottom, securing every loan. Nuclear weapons function as discreet machines of desire; anchors, tying back the sail of credit that circumscribes our forward time horizon, making the threat of total consumption the anchor of the entire consumer economy. Of course the debt itself, or the desire to collect the debt, is ultimately the chief deterrent that has kept these weapons from being used frequently. Globally, the link between nuclear weapons and debt has had important spatial and political consequences; the weapon that ultimately brought about the collapse of the Berlin Wall was debt: debt, of course, created by the nuclear arms race. The US risk analysis or gamble was that the capacity for capitalism to create an unlimited deficit would force the sink of debt to lower the living standards within the soviet union, and create enough domestic dissatisfaction to cause a collapse of support and a power vacuum. Ultimately it was this debt vacuum that pulled down the Berlin wall.

The Manhattan project originated both the collateral at bottom, binding together the globes debt and the computational ships, transporting value from computer port to computer port at the speed of light. The Manhattan project eclipsed all previous epochs within the dark umbra of nuclear weapons and the gray penumbra of information technologies. In principle, we could say that we live in the shadow of Oppenheimer.

The Shadow of Edward Bernays: Umbra and Penumbra

The Manhattan Project marked a dramatic expansion of the credit horizon at the midpoint of the 20th century. This enormous turn was prefigured by a turning point of perhaps equal significance and consequence at the beginning of the 20th century. This was a turn inward, a turn toward our interior geographies of desire. Central to this inward turn are the ubiquitous and discreet technologies of constructing desire developed by Edward Bernays. These technologies instrumentalize the articulating edge of the credit/time horizon toward our inward geographies.

In order to fully appreciate the nature of Bernays' impact, we must briefly review one additional financial instrument: Compound interest. Compound interest is the value placed on the current use of capital anticipating its future value. It is money paid for money or time added to time. Compound interest creates a powerful incentive for stored value to enter the present exchange; it serves as a kind of gravity pulling all value into the capital market exchange. The interest rate or amount paid

for the use of stored value in the present must continuously be added to the initial or principle; this is a continuous exponential addition. In order to maintain the total obligations of the time promise of compound interest, (and this is crucial) the sum total circulation of the economy must, by definition, continuously expand. This expansion is exponential, (compounding) meaning that, by definition, it is continuously accelerating, and it pressurizes the credit / time horizon. As the front edge of this horizon pushes forward, it continuously folds back upon itself through the instrument of compound interest. There is perhaps no more defining characteristic of our epoch than expanding acceleration and territorial conquest.

While much of the last 400 years can be understood as the story of these expanding conquests, by the beginning of the 20th century, maintaining this continuously accelerating expansion required new geographies, new territories to conquer. These new territories were discovered within. They are constructed territories of desire, built specifically to be conquered. These desires are constructed and very real. They are engineered as carefully as the products they are moving. They are conceived, born, nurtured, cared for, fed and brought up, live, die, and are reborn in new forms. No one has been more seminal in the invention of the arts, sciences, and technologies of constructing desire than Edward Bernays.

Edward Bernays life and impact was magnificently documented in a four part BBC Series (2002) directed by Adam Curtis entitled 'The Century of the Self'. Born in 1891 and living for 104 years (d.1995), Edward Bernays' ideas had a profound influence on the entire 20th century. He was the nephew of Sigmund Freud, in fact he was the 'double' nephew; Bernays mother was Freud's sister and his father was the brother of Freud's wife. Studying, and then working directly with his uncle's insights and techniques, Bernays developed a specific set of operations to engineer, create, and control desires on an unprecedented scale and scope. Bernays' techniques begin with the Freudian idea that people respond to situations and make decisions based on their emotional and unconscious feelings, rather then their 'rational' mind analyzing the given facts and information. From this, Bernays developed a process to analysis and determine individual and group emotional / psychological responses to situations. Along with these steps to determine responses, Bernays developed a wide array of techniques to manipulate and construct specific emotional and unconscious reactions within individuals and groups. In his seminal 1928 book called 'propaganda', Bernays outlines the principles of these techniques and expresses his opinion that they are necessary.

> "The conscious and intelligent manipulation of the organized habits and opinions of the masses is an important element in democratic society. Those who manipulate this unseen mechanism of society constitute an invisible government, which is the true ruling power of our country. We are governed, our minds are molded, our tastes formed, our ideas suggested, largely by men we have never heard of. This is a logical result of the way in which our democratic society is organized." [1]

Bernays believed that much of human decision-making was manipulated, and he brought to this a new and essential technique of unconscious manipulation, a technique that his colleague Walter Lippmann called 'a revolution in the art of democracy, the manufacture of consent'. As a young man Bernays sat with Lippmann on the US Committee of public Information. A committee established by President Wilson with the specific purpose of creating the propaganda necessary to 'manufacture consent' within the U.S. population to enter WWI. The Success of this committee astounded everyone involved and soon after the war Bernays decided 'that if propaganda could work for war it could work for peace'. He set up an office of 'public relations' in NYC and began to offer a particular technique he called 'engineering consent' to the major US corporations and political leaders of the time. Here Bernays describes why he believed this was necessary.

> "In almost every act of our daily lives, whether in the sphere of politics or business, in our social conduct or our ethical thinking, we are dominated by the relatively small number of persons...who understand the mental processes and social patterns of the masses. It is they who pull the wires, which control the public mind." [2]

Bernays' techniques were developed directly through the study of his uncle's work. An early example is instructive to illuminate the specific 'technologies' involved. When Betty Crocker rolled out their new instant cake mix, they were baffled as to why it was not selling. All of their research had shown that women loved the idea, yet sales were

almost non-existent. They had invested heavily in this new idea, so they had a problem. They brought this to Edward Bernays, who conducted 'analysis' sessions with small groups of women, and discovered that a hidden guilt within the women about feeding their families with a product that did not contain any of themselves in it. Bernays not only identified the problem but also created the solution; 'add an egg'. He had identified that this form of 'participation' would not only remove the guilt but amplify the feeling of a woman putting a piece of herself into the cake. This very famous instruction was simply added to the side of the box, and sales sky-rocketed and they continue strong to this day. This recognition of unconscious emotional responses as the primary drivers of decision-making was developed and deployed across all manner of consumer and political products. In addition to identifying and manipulating these emotive reactions, Bernays developed a wide range of techniques for constructing them. The Coca Cola logos at ball games and other mass emotional events are not there to 'sell' you coke at the event. They are constructing relational associations between the image of the logo and an emotion that you may feel during the game. These then work as unconscious triggers igniting emotional responses the next time you see the logo (in the super market). You mind does not inform your conscious decision making process of these triggers as your hand reaches for a Coke. Bring these techniques to the present and you can quickly recognize the cacophony of images and emotions that barrage our day. Not only the obvious role of 'pop ups' on the internet, but wider, more subtle cognitive projects moving through all 'mediated experience'. Our neurological pathways are in a state of constant barrage and manipulation. These principles are a powerful technology deployed by every major U.S. Corporation and U.S. President since Woodrow Wilson. Focus groups and 'call centers' regularly used by political operatives are set up with these techniques at the core of their operations. These projects both cull unconscious emotional reactions looking for where to 'add an egg' as well as construct the associative relationships using key words that politicians then directly place into their talking points. We are constantly moving in a consumable landscape of multiple desires within a larger narrative of progress that maintains an expanding credit horizon of consumption. The construction of desire required for a continuously accelerating consumption reaches far beyond the presentation of new products and services, into the construction and maintenance of narratives of progress, of wellness, of agency, and safety. This construction of expectations and engineering of desire requires fostering perceptions of freedom itself; freedom of choice, as the freedom to choose among forms of consumption. The entire narrative structure is grounded in and answers to the singular basic requirement for all of the time promises of capital to function; continuous and expanding consumption. This continuous cycle of consumption is achieved through a series of constructed desires that are gratified, then negated and transferred into ungratified desires by the next creation, maintaining a continuously moving, (expanding and accelerating) horizon of fulfillment and emptiness. This structure creates a constant flicker between gratified and ungratified desire, between deferring consumption and consuming. This flicker is the combustion engine at the center of the economy. It is this technology of desire that constructs the central narrative of our shared stories.

Parallel to the corporate use of these technologies, Bernays techniques were studied and deployed by a wide range of political machines including: Joseph Goebbels, Ronald Reagan, Bill Clinton, George Bush (I and II), Margaret Thatcher and Tony Blair. In some ways comparable to Oppenheimers' invention: once it existed, it had to be acknowledged, factored in and included as a technique. Ignoring these tools would be at your own risk as your political enemies were certainly using them; everyone had to 'take a stand.'

As Oppenheimer dug inward, deep within the structures of substance and created the possibility of an outward explosion, a release of energy of such a scale that it altered the trajectory of life on earth. Bernays also dug in, deep within the structures of the mind and created the possibility to construct an inward explosion, an articulation of our internal geography. A geography at once constructed and conquered by both corporate and state actors. Like Oppenheimer we live in the shadow of Edward Bernays' his inventions casts a dark umbra of corporate engineering of desire and a gray penumbra of the political manufacturing of consent.

WHERE DO I STAND?

> "Creating new circuits in art means creating them in the brain too....the brain's a spatio-temporal vol-

> ume: its up to art to trace through it the new paths open to us today."[3]
> - Gilles Deleuze

> "For a poet's despair is not just personal; he despairs of the word and that implicates all our hopes." [4]
> - Anne Carson

The poetic, literary, spatial and material imagination inherent to the arts and architecture offer modes of resistance to the diminishing stories of consumption and the fragmentary non-stories of state authorship. In this sense, literature is freedom and the poetic imagination is perhaps the most pragmatic means of addressing our social and political lives. It affords a means of comprehending this fragile globe and its people; the poetic imagination is a dimension of human life, a mode of insurgency, pockets of word / space within the collapsed structures of capital's hegemonic time.

In writing the architectural programs of our time, architecture is manifesting human thought and action. It is constructing a world of significant space. In this sense, architecture is a life sustaining discipline; an empathetic discipline with a life of it's own, reciprocal to ours. Perhaps, unbeknownst to itself, architecture contains a mode of insurgency, a spatio-temporal language of empathy and difference that includes our nuanced fragilities in our shared stories: pockets of space within the collapsed structure of capital's hegemonic time. As we move into the 21st century, perhaps architecture will discover itself anew, not as a mirroring expression of the capital market exchange, but as a deeply human exchange of life and space. An exchange that embodies the widest, most nuanced spectrum of what it is to be human into our reciprocal spaces. For to the extent that our spaces embody who we are, our humanity, we are all elevated and find ourselves at home in the world.

ENDNOTES

1 Edward Bernays, *Propaganda,* (Brooklyn, NY: Ig, 1928), 37.
2 Edward Bernays, *Propaganda* (New York, NY: Ig Publishing 1928), 17.
3 Gille Deleuze, *Negotiations* (New York, NY: Columbia University Press, 1995), 60.
4 Anne Carson, *Economy of the Unlost,* (New York, NY: Princeton University Press, 1999), 121.